TECHNOLOGY DEPT.

AUGUST, 1952

Telephone Engineer and Management

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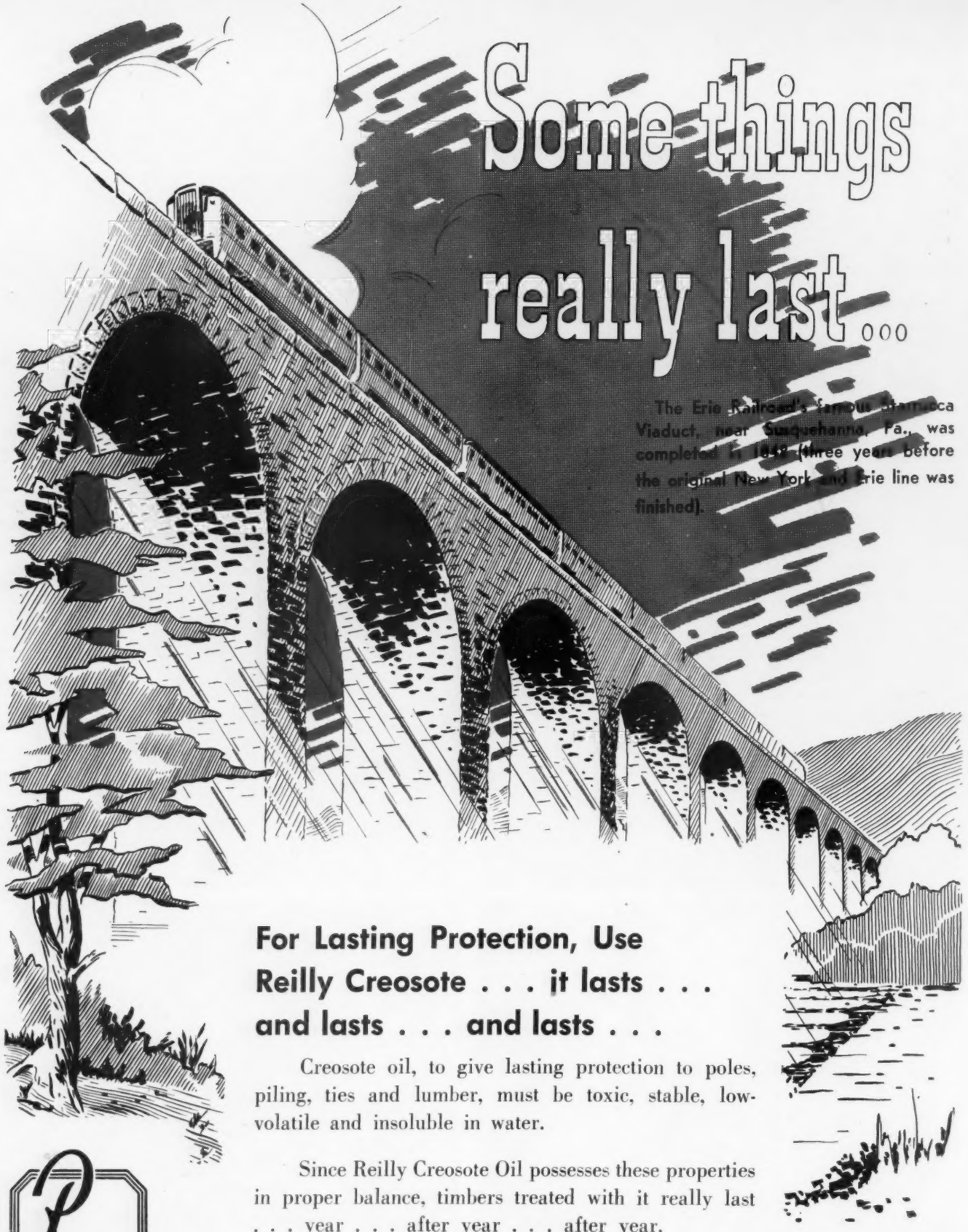
AUG 25 1952
DETROIT

THE NATIONAL TELEPHONE MAGAZINE

Featuring In This Issue—

- The Telephone Looks To The Future, *by George L. Best*
- Presenting Facts To Employes, *by Earl Galdeira*
- Homespun Telephone Philosopher, *by John Withy*
- Washington Reports • Industry News • Questions & Answers



Some things really last . . .

The Erie Railroad's famous Starrucca Viaduct, near Susquehanna, Pa., was completed in 1848 (three years before the original New York and Erie line was finished).

For Lasting Protection, Use Reilly Creosote . . . it lasts . . . and lasts . . . and lasts . . .

Creosote oil, to give lasting protection to poles, piling, ties and lumber, must be toxic, stable, low-volatile and insoluble in water.

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REILLY TAR & CHEMICAL CORPORATION

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You may be able to save up to 50% on maintenance costs throughout the life of your stationary batteries through the use of the Gould Plus-Performance Plan. Write Gould Battery Information Headquarters for full details.

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GOULD-NATIONAL BATTERIES, INC., TRENTON 7, N. J.

Always Use Gould-National Automobile and Truck Batteries

Across The Editor's Desk

Friends of JAMES ENGH, since 1901 with Automatic Electric Co., Chicago, were saddened by his sudden death the evening of August 2. Jim's service record of 51 years to the Independent telephone industry was not too long for one of his caliber. Until his death he was active as a sales engineer of his company.

• • •

W. A. (ROSEY) ROSENBAUM of Western Union is retiring because of declining health. He began "bucking the reel" for Western Union near Indianapolis and has been with the company for over 41 years. Before he left he asked us to convey to his many acquaintances in the telephone field his hearty thanks for the splendid cooperation you gave him and with "73" to all says it was a pleasure to do business with such a swell bunch of people.

• • •

J. P. (JIMMIE) BORDEN, executive of the Central Telephone Co., Charlottesville, Va., recently received a Boy Scout service award from the Stonewall Jackson Area Council of Virginia, Boy Scouts of America, for his 26 years service to that group. He has been with his company 32 years and is active in civic and patriotic affairs. Jimmie was honored by being featured in a current issue of the company magazine "Public Service".

• • •

Readers of TELEPHONE ENGINEER magazines have several special issues coming. On Sept. 15 our Fall Construction & Maintenance Number will be mailed. It will be filled with seasonal and helpful articles for companies preparing for the coming winter. On October 1 our Pre-Convention Number will bring you official program, and all details of the National convention of the U. S. Independent Telephone Association scheduled for mid-October. Our October 15 issue will bring you the Convention Report Number which will detail and report the meeting plus candid pictures of many of those in attendance.

The National Telephone Magazine

Telephone Engineer and Management

AUGUST, 1952

Editor, RAY W. SMITH • *Advertising Director,* ROY F. SMITH
Managing Editor, JOHN G. REYNOLDS
Financial Editor, ALBERT W. KIMBER
Production Manager, VIRGINIA McCOLLUM
Advertising Manager, DON C. SORENSEN
Washington Bureau, ROLAND C. DAVIES *and* FRED HENCK
Circulation Manager, VIOLET ALTMEYER

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FRONT COVER

Photographs taken at 1952 convention of California Independent Telephone Association. Top (l. to r.)—Dr. Paul Smith, pres. of Whittier College: Aubrey Wardman, director of Associated Tel. Co., Ltd.; H. F. Knapp of Sanger Tel. Co.; R. D. Collins of Associated Tel. Co., Ltd. and R. H. Phelps and Joe Galligan of Stromberg-Carlson Co. Bottom (l. to r.)—R. H. Burfiend of Automatic Electric Co.; C. F. Mason of Associated Tel. Co., Ltd.; Rupert Schotts, Chicago; and Warren A. Rolph, Allan M. Anderson, and Everett M. Morningstar, all of General Tel. Directory Co.—*Photos by Jack Jensen of Associated Tel. Co., Ltd.)*

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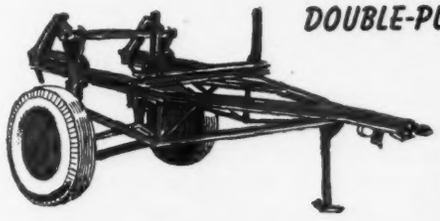
GraybaR TELEPHONE NEWS

IN THE DAYS OF THE ROARING WEST

In the 80's, line crews, at best, were meagerly equipped. And – as the Frontiersmen of the period looked on pole lines primarily as a handy source of firewood, wire and six-gun targets – it took both strong backs and ingenuity to build and maintain them. Telephone companies, therefore, soon realized the importance of equipping crews with all of the tools and materials needed for any pole-line emergency.

Since the beginning of telephony, Graybar has supplied and distributed the best-known lines of tools to your industry. And, today, Graybar can provide everything you need to equip a truck or trailer – drawbars and towing hooks . . . derricks, hoists, and jacks . . . cable spinning and underground equipment . . . power and hand tools.



DOUBLE-PURPOSE TRAILERS

You'll find this convertible cable reel and pole trailer a particularly valuable piece of equipment if you do not require full-time use of two separate units. Easily converted with simple hand tools, it is available in 2 models: for 34- 38-inch reels, and for 44- 48-inch reels. In addition, Graybar distributes a complete selection of standard pole dinkies, heavy-duty pole trailers, and cable-splicer carts.

A TRULY PORTABLE DIGGER

The Adams "PE" digger drills holes 9′ in depth at a range of 15′ from any truck carrying a pole derrick. The 8 h.p. engine clamps on the truck bed and transmits power to the auger through a flexible shaft and mercury clutch assembly. No power take-off is needed, nor can the motor be stalled. The digger operator has complete control over speed, direction and depth. For complete details on the low-cost, labor-saving "PE" digger, check with your local Graybar Representative.

342 YEARS OF EXPERIENCE

For technical help on pole-line construction or central station problems, feel free to consult one of the 19 Graybar Telephone Specialists – you'll take advantage of over 342 combined years of service in your field.

274-228

Call Graybar first for...

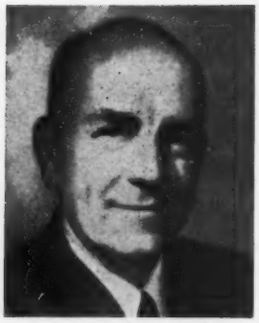
GRAYBAR ELECTRIC CO., INC.
Executive Offices:
Graybar Building, New York 17, N. Y.
IN OVER 100 PRINCIPAL CITIES

John Withy
—Proves philosophy pays.

Earle Galdeira
—tells how it was done.

In This Issue of Your TE&M

Jay G. Mitchell
—answers two timely questions.



George L. Best
—Looks to the Future.

John S. Reed
—makes a hard problem easy.

WE WORKED on this issue while the politicos were conventioning in Chicago and somehow we managed to get it to press without once hollowing for a "recount", threatening to "walk out", or demanding a "poll". Of course, our writers made the whole thing easy for us and we believe they have come up with articles that'll make this issue of TE&M a right valuable book to you . . . Here's what's ahead.

IF YOU'VE been wondering where the telephone industry is going, AT&T's Vice President GEORGE L. BEST has an inspiring message for you. In his article on page 40, "The Telephone Looks To The Future"—Mr. Best proves that in this rapidly moving world opportunities to expand the usefulness of telephone services never seemed better than they do right now.

HOW THE "HOMESPUN Telephone Philosopher" has formulated a recipe which is paying off in improved subscriber relations is told in JOHN WITHY'S story on page 50. John is one of our newest contributors and we think you'll like the way he proves that a bit of humor plus some homespun philosophy are good mixers for a small telephone company to use.

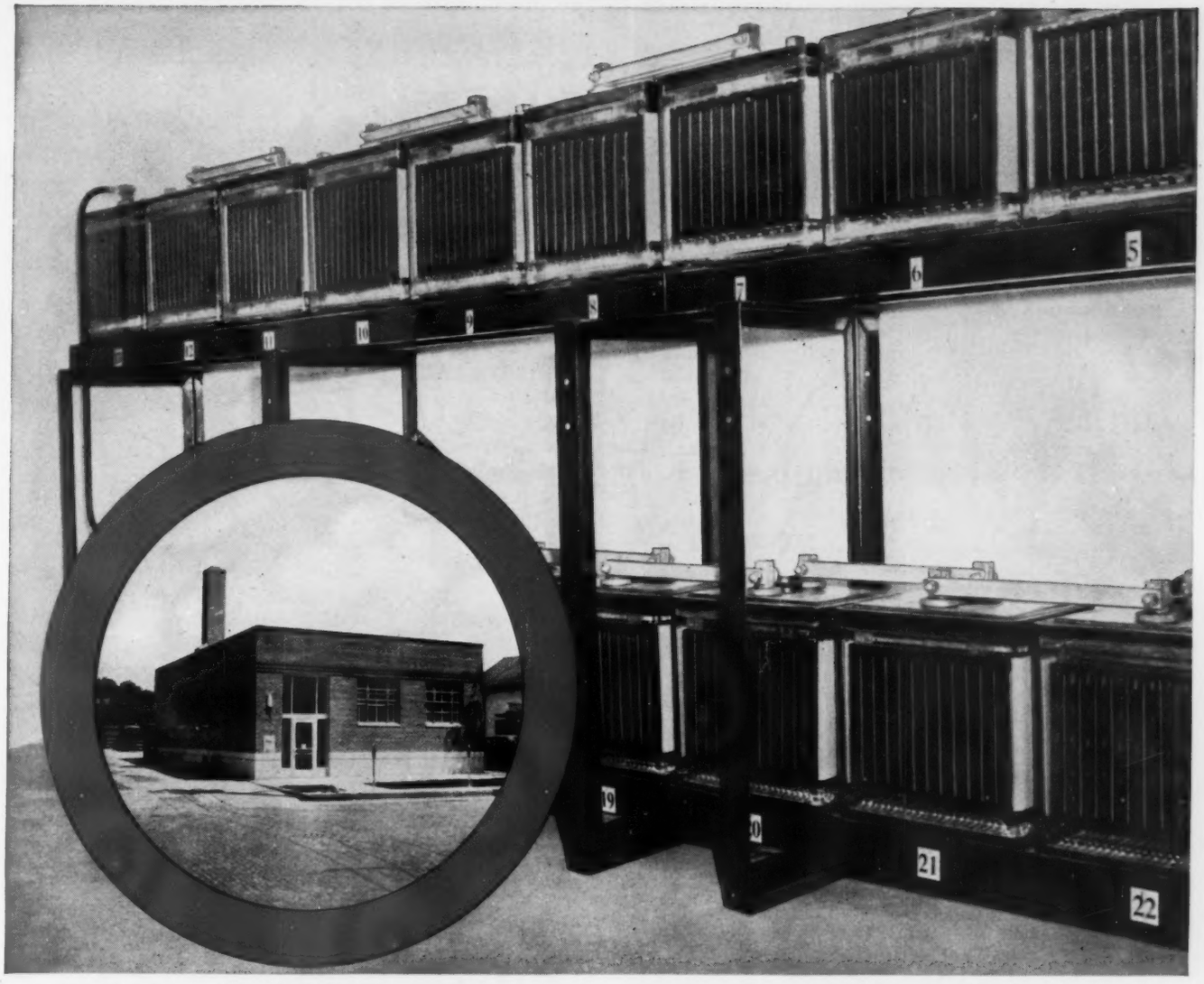
WE HEARD EARL GALDEIRA, an employe of the Mutual Telephone Co. of Hawaii, address the 1952 USITA Executive's Conference and we liked what we heard. In fact we liked it so well we asked Mr. Galdeira to prepare a special article for TE&M readers. For a clear picture of management and employees working together, we recommend Mr. Galdeira's article. You'll find it on page 44.

When JOHN S. REED launched his present series on "Modern Central Office Maintenance" in the July, 1951, TE&M we knew John had hit on a subject that's needed thorough editorial treatment for some time. So far, John has written about 50,000 words on the subject and mail from our readers indicates that they hope he'll write at least 50,000 more. We're pleased at this reader response—so pleased we're thinking of putting the entire series together in a book. What do you think of the idea? . . . This month's installment of Mr. Reed's article starts on page 60.

Another thing we editors are glowing about is the way you readers praise our editorials. Believe you us—your letters make us feel just downright good. The editorial on page 33 of this issue is entitled "Running Hard To Stay In One Place" . . . Hope you like it.

And there's more, too . . . Our Washington correspondents, ROLAND DAVIES and FRED HENCK have the inside track on late Washington developments and they start telling you about it on page 38. . . . JAY G. MITCHELL answers two big questions (see page 76) . . . and, as usual Industry News Briefs (page 16) is crammed with news . . . Hope you like everything . . . How about letting us know!

See You Next Month—
YOUR EDITORS



Wisconsin Dells Exchange of General Telephone Company of Wisconsin.

Two-step rack of 26-cell EME-25 Exide-Manchex Battery

IN WISCONSIN DELLS, DEPENDABLE, LONG-LASTING

Exide-Manchex BATTERIES

Here's a typical example of the telephone progress being made in the smaller communities of America's greatest dairy state. Just recently the Wisconsin Dells Exchange was converted to dial operation with 1300 subscribers. Dial-switching equipment consists of 900 lines which handle approximately 10,000 calls per day. Equally modern and efficient is the battery that is used—Exide-Manchex, the battery that assures:

POSITIVE OPERATION: Dependable performance for all telephone battery requirements—central office and private branch exchange equipment.

ADEQUATE RESERVE POWER for emergencies beyond normal needs.

LOW OPERATING COST: High electrical efficiency.

LOW MAINTENANCE COSTS: Water required about twice a year. No change of chemical solution needed during life of battery.

LOW DEPRECIATION: Sturdy, long-life construction, which includes the exclusive manchester positive plate.

GREATER CAPACITY in a given amount of space avoids overcrowding of equipment.

• • •

Various sizes and types of Exide Batteries, up to 100 ampere hours capacity, are available in plastic containers.

THE ELECTRIC STORAGE BATTERY CO.
Philadelphia 2

Exide Batteries of Canada, Limited, Toronto

"EXIDE" and "MANCHEX" *Reg. T.M. U.S. Pat. Off.*

1888 . . . DEPENDABLE BATTERIES FOR 64 YEARS . . . 1952

it's the RESULTS THAT COUNT!

results . . . The ***Satisfactory Results*** produced during our 42 years of experience—specializing in telephone directory advertising —have ***attracted more and more customers*** to our company.

results . . . The ***Net Results*** attained on every canvass by ***adding more and more revenue*** to the directories have assured our customers of ***Greater Profits***—for operating expense and dividends.

results . . . The ***Favorable Results*** produced by ***maintaining more and more reliable, accurate, attractive and well designed books*** have set today's pattern for ***Modern Streamlined Directories.***

CALL OR WRITE FOR DETAILS . . . . **TODAY!**

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BRANCH OFFICES in Birmingham, Alabama, • Bristol, Chattanooga, Memphis and Nashville, Tennessee • Harrisburg, Pennsylvania • Jackson, Mississippi Kansas City, Kansas • Louisville, Kentucky • Milwaukee, Wisconsin • New Orleans, Louisiana • Rochester, New York • Tampa, Florida • Warsaw, Indiana

"Likes Markstein Article"

TO THE EDITORS: We would like your permission to reproduce the article titled "Good Press Relations Don't Just Happen", by Dave Markstein which appeared in the June, 1952, issue of TELEPHONE ENGINEER & MANAGEMENT, for distribution within our area organization to employees responsible for press contacts.

We sincerely believe that Mr. Markstein's article is one of the finest we have seen on the subject of the "do's" and "do not's" of press relations and believe it would be of great assistance to our employees in their press contacts.

Congratulations on the publication of this fine article. We shall look forward, as we always have in the past, to future editions of your excellent magazine.

WILL H. ROGERS

INFORMATION SUPERVISOR
SOUTHWESTERN BELL TELEPHONE COMPANY
DALLAS, TEXAS

Thanks, Mr. Rogers, for your very nice letter commenting on Mr. Markstein's article. We are glad to give you permission to reprint the article and we appreciate your interest in our publications. We hope our future issues will contain other articles that will be of value to you.—THE EDITORS.

"Thanks, Mr. Newell . . ."

TO THE EDITORS: When I picked up my copy of the June issue of TELEPHONE ENGINEER & MANAGEMENT this morning, I could not resist the impulse to drop you this note of congratulation on its appearance.

Not only on its appearance but on the editorial content and the make-up. To me the impression is one of high accomplishment in publishing.

ROBERT B. NEWELL

BACHRODT, NEWELL, O'KANE & GANO
CHICAGO, ILLINOIS

Now we know one of the reasons you are a favorite with all of our staff is your thoughtfulness and graciousness. Your letter commending our June issue contained words of commendation that all of us really appreciate. I accept your congratulations as Editor but give full credit to our wonderful staff.

We are glad you noticed the change of pace that we incorporated in the June issue in our endeavors to make our magazine both interesting and informative. You picked the issue where this new format was tested and your letter has a very definite value to us for that purpose.—THE EDITORS.

QUOTE

. . . do we not need two constitutional Amendments, one limiting the total amount which Congress may appropriate, and the other forbidding the government to borrow money—thus making it imperative to balance the budget every year? Without such measures, is there any likelihood that extravagant spending and the drift toward socialism can be stopped?—*Bowling Green (Va.) Caroline Progress.*

"Thank You, Mr. Dean"

TO THE EDITORS: For some time I have intended to write you and compliment you on various articles in your publication with reference to the lag in commission procedure. The article in your February issue was very helpful to us. We believe that it had much to do with securing a rehearing in our rate case, which culminated in giving us what we had originally asked, but which, however, is proving insufficient due to the fast increase in all expenses, to say nothing of taxes which, of course, are abominable. I am enclosing our annual report for the year 1951. You will find statistical information concerning our company for the past ten years on the back page, together with a map showing the territory we operate in.

I should also like to comment on

Coming Features for TELEPHONE ENGINEER readers

September 15, 1952

FALL CONSTRUCTION and MAINTENANCE PRACTICES

will be the theme of this annual issue. Every man interested in maintenance and construction will prize and keep it.

Featuring

New Construction Methods

Field tested new time-saving and money-saving methods. New tools and new ways of using old tools.

Good Construction & Proper Maintenance—Good Service

Another up-to-the-minute article by John S. Reed author of the current series on Modern Central Office Maintenance.

Maintenance of Open Wire Leads

A discussion on test points in open wire leads, loose tie wires, excessive slack, replacement of old wire, etc., etc.

Cable Layout Planning—Records

How to select proper feed routes, determine the number of cable pairs for present and future. An article you will keep for reference.

Helping the Rural Line Co.

John G. Reynolds, managing editor, answers many of the problems sent to him by personnel of rural line companies.

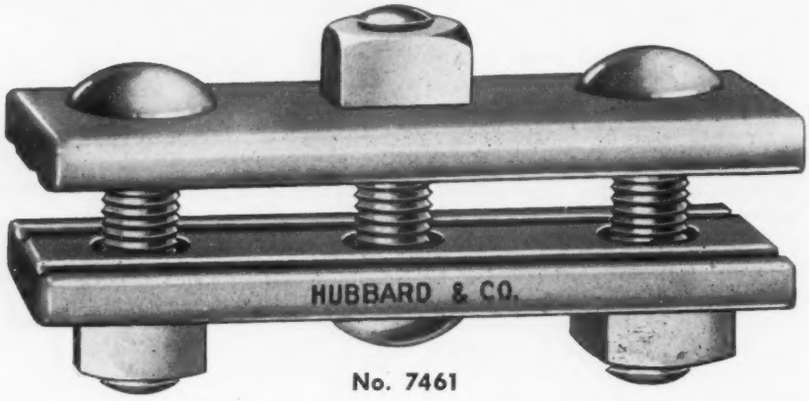
Read all of these special articles plus all of the regular features in your September 15th issue of

Telephone Engineer and Management

HANG THE LOAD ON HUBBARD HARDWARE

HUBBARD GUY CLAMPS

Hot Galvanized



No. 7461

The tremendous holding power of Hubbard Guy Clamps may be attributed to the straight, parallel grooves which grip the strand securely along the entire length of the clamp. Special strength steel bolts have large heads and oval necks which trap in the clamp body and prevent turning while tightening. Clamp Bolts will not strip nor elongate in normal use.

Manufactured in 1 to 4 bolt styles. For complete information, write or call the Hubbard and Company office nearest to you.

information in your publications from time to time, giving the rates the REA is requesting and which are being approved, similar to the one on page 6 of the News Letter above referred to. Some little time back (I don't seem to know just what one it was in) you published the rates requested by REA of some Montana town that were very much higher than any rates charged by Independent companies of similar size, and even much higher than any Independent company had requested from the commission. This is all good information for us to have in talking to both the commissions and the public.

I might also advise you that we are fast coming to the conclusion of our four year program of converting exchanges and establishing new exchanges to dial, at a cost of over $2,000,000. By the end of this year we will be 96 per cent dial, or a little over.

W. H. Dean
Pres., Oregon-Washington Tel. Co.
Hood River, Ore.

We can't begin to tell you how much we appreciate your comments on the editorials and contents of our publications. You possibly realize that it takes a lot of time and real digging for facts to present these editorials and naturally we are only human in wanting to know if they are doing a job for our industry. Your letter proved that to us. For the past five years we have been hammering at the commissions to speed up the process of rate relief to the small Independent companies and have had excellent results from some 15 states already, and to know that this campaign is showing results for you too, pleases us.—The Editors.

"Hope It Helped . . ."

To The Editors: We enclose a copy of your Editorial, "25% Won't Be Enough", as reproduced in the July 10th edition of our local weekly, *The Sargent Leader.*

We like your editorials very much and think they really hit the spot. We thank you very much for permission to use them in our local paper.

James G. Pierce
Crownover Telephone Co.,
Sargent, Neb.

"Permission Granted"

To The Editors: We would like to receive your permission to reproduce Dave Markstein's article, "Good

(*Please turn to page* 12)

Talk about Cool Comfort

SHERRON

ANNOUNCES THE FIRST AIR-CONDITIONED TELEPHONE BOOTH

WRITE FOR FULL PARTICULARS

- No installation problem. No plumbing. Uses no water. Plugs into any AC outlet. Operates on 115 volts.
- No drain-off. Moisture is evaporated and dissipated into air outside booth.
- Underwriters approved.

COMPLETE, SPECIALLY DESIGNED, COMPACT REFRIGERATION SYSTEM COOLS AIR . . . DRIES AIR . . . CIRCULATES AND INTRODUCES FILTERED FRESH AIR INTO SHERRON EXECUTIVE BOOTH

Here—for the first time—is a telephone booth as refreshingly cool as any efficiently air-conditioned room. As comfortable. As free of stale, smoke-saturated air . . . thanks to an ash-tray exhaust that banishes tobacco smoke and odors. Occupant enjoys cooling effect of the air-conditioning in quick seconds — even before he finishes dialing. Temperature in booth can be varied to seasons and climatic conditions. The booth will operate in a 100-degree ambient temperature.

With this new Sherron development, the telephone booth now boasts the ultimate in desirable improvements. Powered by Servel, this refrigeration system is the most trouble-free yet developed. It is installed inside the booth, and the entire mechanism can be easily removed. All electrical accessories can be readily reached for testing or replacement—through an access panel. The air-conditioned Sherron Executive Booth is sold with a 1-year warranty and a 4-year protection plan.

MODEL 50S—TYPE 6
36" x 36" x 83¾"

SEE OUR SPECIFICATIONS SWEET'S

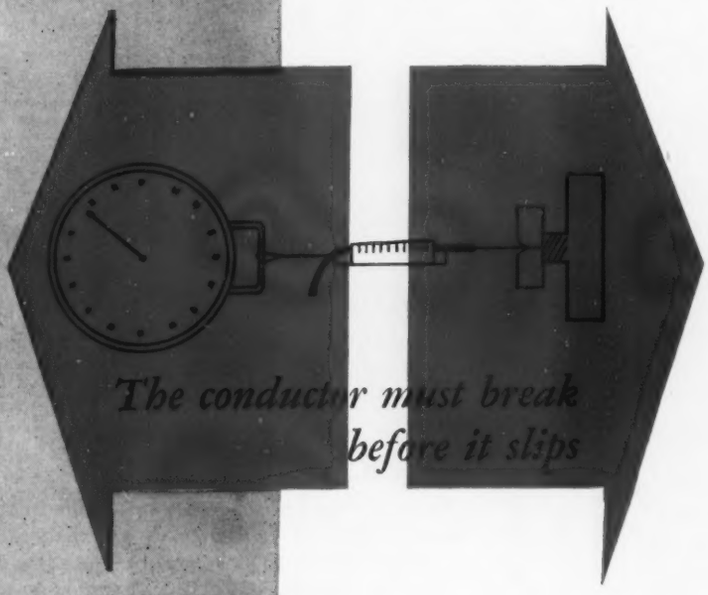
SHERRON METALLIC CORPORATION

1201 FLUSHING AVENUE • BROOKLYN 37, NEW YORK

See complete Sherron line in Telephony Directory and Telephone Engineer & Management Directory

ALPHADUCT

P clamp adhesion test



P clamps are the most widely used method of attaching drop wire to buildings. Lest you may worry about a P clamp causing slipping of the insulation or jacket on Alphaduct Neoprene Jacketed Drop Wire — read about this Alphaduct service test. This test is made daily.

A sample of Alphaduct wire is inserted in a P clamp with 12 inches of the wire projecting from the top of the clamp. The bail of the clamp is then inserted in the upper jaws of a tensile testing machine, and the end of the wire is stripped free of jacket and insulation and inserted in the other end of the machine.

The jaws of the machine are then gradually separated until the conductor breaks. The conductor must break before there is ANY slipping of either the jacket or the insulation.

Don't have any worries about a little old P clamp hurting ALPHADUCT drop wire. Try Alphaduct. It's dated by a color coded thread so you can see for yourself how long it lasts, how much money it saves.

ALPHADUCT WIRE AND CABLE COMPANY • MILLTOWN, NEW JERSEY

NATIONAL DISTRIBUTORS • LEICH SALES CORPORATION, CHICAGO, ILLINOIS

REGIONAL DISTRIBUTORS • PANKEY SUPPLY CO., CHARLOTTESVILLE, VA.

THE LINDSAY TELEPHONE SUPPLY CO., CLEVELAND, OHIO

Press Relations Don't Just Happen", which appeared in the June issue of your magazine. We want to get it in the hands of certain management people in this company, particularly the exchange managers.

If such permission is granted, we would appreciate some biographical information on the author to accompany the article.

H. Allen Carroll
The Mountain States Tel. & Tel. Co.
Denver, Colorado

"Glad You Like Them . . ."

To The Editors: May I compliment you on the many new features that keep popping up with each issue of Telephone Engineer & Management. Each issue seems brighter and more interesting than the last.

John Withy
John Withy & Associates
St. Paul, Minn.

"Want New Reed Book"

To the Editors: I have been following the articles by Mr. John S. Reed, entitled "Modern Central Office Maintenance Practices", with much interest. I would like to add my name to those who are requesting the articles be published in book form.

My congratulations to you and Mr. Reed for giving us such an interesting and informative series of articles on this subject.

When and if the book is published, will you please reserve a copy for me?

Martin J. Feeney
Bluefield Telephone Co.
Bluefield, W. Va.

"Order Entered . . ."

To the Editors: We will be pleased to purchase 5 or 6 copies, according to the price, of the proposed book "Modern Central Office Maintenance", by John S. Reed, according to page 54 of the July 1952 issue of Telephone Engineer & Management.

Lloyd C. Henning
Navajo-Apache Telephone System, Inc.
Holbrook, Arizona

NEWSLETTER
TELEPHONE ENGINEER

Fortnightly TELEPHONE ENGINEER ★ TELEPHONE ENGINEER AND *Management*
ON THE 1st OF EACH MONTH ON THE 15th OF EACH MONTH
NEWSLETTERS *on Alternate Weeks*

August 15, 1952

Dear Sir:

With newly-constituted Wage Stabilization Board (WSB) sworn in Aug. 5, following Pres. Truman's selection of all but 2 of public members & 2 of industry's members, WSB was slated to issue statement showing how agency's slashed appropriations will affect its organization.

Of 14 members named, 12 are holdovers from preceding WSB, which expired July 29. New members are Chairman Archibald Cox, of Harvard Law School faculty & Harold L. Enarson, former California university professor who has been on staff of Defense Mobilizer John R. Steelman.

* * *

Expenditures for new construction in telephone & telegraph industries in July amounted to $47 million, 14.6% above July 1951, according to preliminary Dept. of Commerce estimates announced Aug. 2.

* * *

A lengthy series of approvals of telephone industry contract agreements marked recent exit of the Wage Stabilization Board as previously set up. Regulations under which the board staff is operating will continue under the new WSB.

In General Telephone System, the Kentucky Tel. Corp. was given three approvals. Two, with no union, were for a 13¼-cent general average hourly increase for clerical, office, & supervisory employees & 15.18 cents an hour for general accounting & 8.95 cents an hour for revenue accounting workers. Michigan Associated Tel. Co. was granted permission to institute 8.6-cent average hourly general pay increase.

International Tel. & Tel. Corp. was authorized to modify its vacation plan for its New York headquarters employees. No union was involved.

Independent telephone companies granted approvals included following: San Angelo (Tex.) Tel. Co., 11.4-cent hourly general wage increase; Lapel (Ind.) Tel. Co., general pay increase and progression schedule changes for traffic and plant; Redwood County (Minn.) Tel. Co., general increase of 14¾ cents an hour for linemen and office employees, 8.62 cents for operators, and 15 cents for managers; Tioga County Bell Tel. Co., Wellsboro, Pa., introduction of rate range schedules & differentials, 6.24-cent hourly average pay increase, & modification of holiday pay;

Northwest Tel. Co., Tomah, Wisc., wage increases for plant, traffic & accounting workers, & modification of holiday & evening premium pay for traffic workers; Platteville (Wisc.) Tel. Co., 13½-cent increase for plant employees & 7.3 cents for traffic, employees represented by IBEW; Cass County Tel. Co., Harrisonville, Mo., 7½-cent hourly average pay rise for traffic, & $20 a month for linemen.

Bell Telephone Co. of Pennsylvania has petitioned WSB for approval of suggestion plan to pay cash awards for adopted suggestions submitted by non-management employees. If approved by WSB, plan contemplates uniform payment for all suggestions adopted. Suggestions put into effect will be considered periodically for special merit awards.

* * *

A motion by American Tel. & Tel. Co. for dismissal of antitrust complaint by inventor of telephone dialing wheel, who alleged $45 million damages, was rejected July 25 by Federal Judge F. X. McGohey of U. S. District Court for New York Southern District on grounds that he wished to obtain facts of case.

In asking for dismissal of suit, A. T. & T. counsel stated that company's reason for not dealing with inventor were that company did not consider device as satisfactory for inclusion in telephone system. Judge McGohey, in refusing dismissal of suit, stated there was involved question of fact as to whether invention was rejected for "lack of merit" or as result of alleged monopolistic practices by A. T. & T. as charged by inventor, J. A. Petnel of Troy, N. Y.

* * *

Because of budget slash affecting FCC Common Carrier Bureau & necessity that personnel of bureau be reduced from July 1 total of 110 to fiscal 1953 average of 104, five staff members have been detailed to Broadcast Bureau, which has additional money because of television processing fund granted by Congress.

The five are Nelson C. Carlisle & John W. Griffin, tariff & rate examiners, & Joseph A. Giamatteo, Douglas S. George, and F. Richard Stuart, accountants.

* * *

Installation of additional broadband carrier equipment on existing open wire, cable, & radio relay facilities of Pacific Tel. & Tel. Co. between Los Angeles & Portland, Ore., was approved recently by the FCC Common Carrier Bureau. The $1,023,000 project provides for a net increase of 276 telephone channels totaling about 107,600 channel miles.

Ray Smith

Ray W. Smith Editor

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Your CLEARING COSTS
Down to Earth with a

HOMELITE One Man Chain Saw

27 POUNDS
4 HORSEPOWER
MORE POWER PER POUND THAN ANY OTHER SAW

When trees are in the way of the job, cut them down with a Homelite One Man Chain Saw. It's the fastest, easiest, most economical way to do it . . . cuts your clearing costs down to earth.

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Industry News Briefs

Inaugurate Move For New Missouri Co-op.

MORE THAN 100 interested farmers attended a recent meeting in Paris, Mo., to hear the REA telephone program explained by Lewis F. Seawell, of the Rural Electrification Administration.

Keen interest in the program was indicated by the fact that farmers in all parts of the county immediately set up a tentative or survey organization to canvas the county to learn how many are interested in such a development. J. M. Lipp, Paris, was elected president; Orville Francis, Victor, vice-president and Homer Levings, Paris, treasurer.

Areas represented at the meeting included Paris, Holiday, Stoutsville, Clarence, Woodlawn, Leesburg, Monroe City, Madison, Molino, Florida, Middle Grove, Granville and Lakenan.

Seawell told the meeting that it is necessary to first determine if improved telephone service is needed in the area, and if the local telephone companies, now in existence, can provide the service. In the event improved telephone service cannot be obtained through the local companies then a cooperative development might be necessary in order to provide themselves adequate telephone service through REA loan funds.

Mr. Seawell stated that on the basis of experience in other places in the United States, the individual telephone user will probably be out around $40 to $50 original membership cost, plus around $3.75 per month for service, after the system is established.

Minnesota Group Gets Quorum on 17th Try

FOR 16 YEARS all attempts failed to get the necessary quorum of 50 members to attend an annual meeting of the Osakis-Long Prairie (Minn.) Cooperative Telephone Association. However, on the 17th consecutive effort, 60 stockholders were present and for the first time the group was able to legally hold a meeting and conduct business.

Because of the long interval when voting and approving the statement could not be conducted, the association immediately elected the following as directors: Ray Dowell, Leslie; Marvin O. Johnson, Little Sauk and Lawrence Strack, Reynolds, for three-year terms; W. S. Hendricks, Gordon and Ed Hoeppner, Long Prairie, for two-year terms; and Albert Arendt, Hartford; Herman Koester, Long Prairie, for one year.

The annual report, the first one legally submitted for discussion in 17 years, indicates the association, although plagued by higher costs is in good condition. It has no debts and has a balance of approximately $4,000.

Montana Co-op Group Holds Annual Meeting

MOVIES OF "The Rural Telephone" were shown to the large group assembled at the recent annual meeting of the Northeastern Montana Rural Telephone Association at Scobey, Mont.

The following trustees were elected for the coming term: Geo. Johnson, Reserve, Mont.; Margaret Hass, Outlook, Mont.; Francis Tarum, Richland; Rueben Baerg, Lustre; Maron La Motte, Scobey; Richard Veis, Scobey; Willie Larson, Culbertson; Herbert Brown, Poplar, and Willie Herman, Wesby, Mont.

According to information presented at the meeting appropriations of $2 million have been declared by Washington REA officials as necessary to cover expenses for the Northeastern Montana group, the largest telephone cooperative in the United States.

M. O. Trego, manager of the Mona Short Line Telephone Co., Sundance, Wyo., is shown above "cutting in new cable" in the process of metallicizing the entire telephone system in Sundance.

Since taking over the telephone company in 1944, Trego has tripled the number of telephones in use in Sundance.—(Sundance (Wyo.) Times Photo.)

CO-OPS:

VERNDALE, MINN.—Approval for the transfer of the properties of the Verndale Telephone Co., owned by Julius Gadaire to the West Central Telephone Association, Wadena, has been announced by the Minnesota Railroad & Warehouse Commission. Actual possession of the exchange was taken by the West Central association Aug. 1.

The West Central Telephone Association is a telephone cooperative recently organized and until May 1, an inactive organization. On that date, the association began operation of the Sebeka and Menahga telephone exchanges. With the addition of the Verndale exchange on Aug. 1, the association now serves approximately 1,000 telephone subscribers in the Verndale, Sebaka and Manahga areas.

Officers and directors of the cooperative are: George Voss, president; Gordon Berg, vice-president and Paul Richter, secretary-treasurer.

An application for funds has been made to the Rural Electrification Administration to provide modern telephone service to the three exchanges and the rural areas now being served by the association.

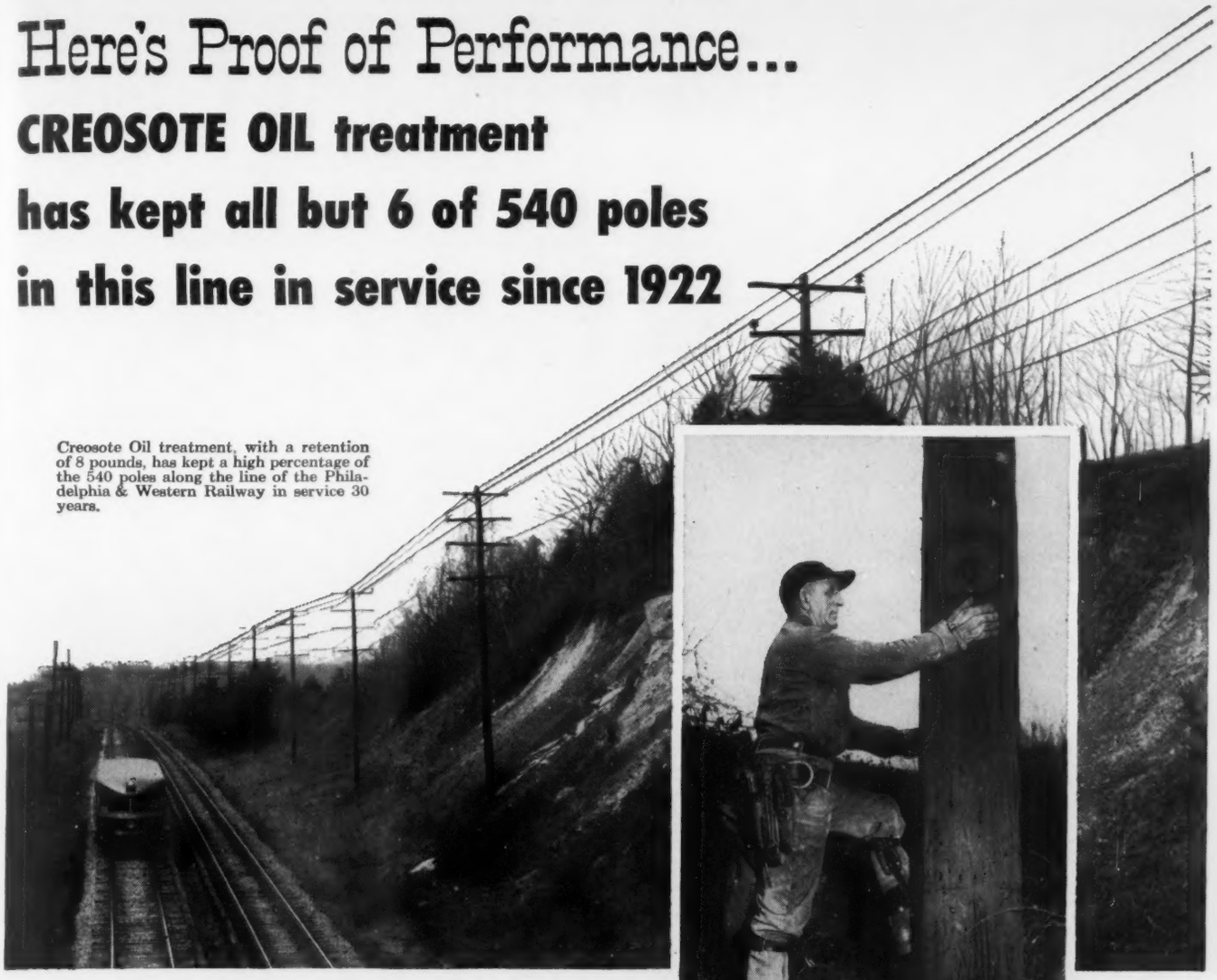
OVANDO, MONT.—"Additional subscribers are needed to secure a loan from the Rural Electrification Administration for the building of an REA telephone system in western Montana," Nick Ginoff of Ovando has announced.

Two meetings have been conducted at Ovando, with representatives from Avon, Finn, Helmville, Ovando and Woodworth attending. Chris Benson of the REA loan division explained by motion pictures and by the question-and-answer method how a telephone system could be put into operation.

Mr. Ginoff states that "rates will be higher than city subscribers are used to paying, but the advantages will be greater. A number of potential subscribers said that if a telephone call could save them a trip to town

Here's Proof of Performance...

CREOSOTE OIL treatment has kept all but 6 of 540 poles in this line in service since 1922



Creosote Oil treatment, with a retention of 8 pounds, has kept a high percentage of the 540 poles along the line of the Philadelphia & Western Railway in service 30 years.

Lineman Henry Daub of the Philadelphia Electric Company prepares to climb a pole on the line he helped to erect in 1922.

IN 1922, the Philadelphia Electric Company erected this 540-pole line along the tracks of the Philadelphia and Western Railway between Norristown and Llanerch, Pa. The Southern pine poles were given an 8-pound pressure treatment with Creosote Oil.

In 1940, the 376 poles on the Main Line—between Llanerch and Matsons Ford Road—were inspected. Two poles were removed due to decay, and three were moved for relocation. The next year, one pole was found decayed on the Schuylkill Division—between Matsons Ford Road and Norristown—and six were relocated.

The third inspection, in 1951, led to removal of three more poles and the marking of 15 more for future replacement. Relocation affected one other pole. Future inspections are scheduled every three years, and most of the poles are expected to last at least another decade.

Let records like these be your best guide when you choose a wood preservative. They are real *proof of performance.* They are the main reason why the wood preserving industry is using Creosote Oil at the rate of more than 200 million gallons a year.

Creosote Oil contains not one but many compounds whose toxicity and permanence ward off attack by such wood destroyers as termites, fungi, dry rot and marine borers.

When you use treated wood, be sure it is pressure-treated with U·S·S Creosote Oil. It's the product of continuous processing in the world's largest tar distillation plant. For complete information, contact our nearest Coal Chemical Sales Office or write United States Steel Company, 525 William Penn Place, Pittsburgh 30, Pa.

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THE GUARD THAT CAN'T GO WRONG!

COSTS 1/3 LESS THAN METAL GUARDS—AND *NO MAINTENANCE PROBLEM*

FLEXIBAL Guy Guards — in standard lengths — provide the flexibility that gives with the blow and cushions the impact. Aluminum-painted, they offer both day and night visibility. No other type of guard is so easy to handle, so simple to install — none so effectively cut down losses — never gets out of commission.

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TEN COMPLETE SETS IN THIS ONE LIGHT EASY TO HANDLE CARTON

SEE YOUR JOBBER OR WRITE TO

S. E. OVERTON COMPANY

SOUTH HAVEN, MICHIGAN

Industry News Briefs

(*Continued from page* 16)

it would more than pay the monthly bill. Basic rates will be from $2.50 and not more than $5.00 a month for the multiparty line which will have not more than eight and generally six on a line. Two-party and business single-party lines will be available on different rate schedules."

RICHMOND, VA.—The Virginia Corporation Commission (VCC) has authorized the Buggs Island Telephone Cooperative to install a communications system that will serve a 200-square mile area in Mecklenburg and Brunswick Counties.

The VCC order granted the company a certificate of public convenience and necessity to establish approximately 82 miles of telephone lines in Southeast Brunswick adjacent to the North Carolina state line.

The VCC also amended, in a companion order, a certificate now held by the Virginia Telephone & Telegraph Co. (VT&T) for a part of the area in which the cooperative was granted permission to operate. The VT&T offered no opposition to the cooperative's petition.

PILOT POINT, TEXAS — Plans for obtaining rural telephone service for the Pilot Point area are being developed by a committee of farmers in the area.

If present plans materialize, the Pilot Point group will form its own cooperative and operate its own telephone service. There also is a possibility that farmers of this area may become subscribers to service of the Tritel Rural Telephone Cooperative, recently organized in the southwest section of Denton County.

Members of the committee include Chairman W. M. Pierce, Eddie Jentzen, Roy Jones, John Pelzel and Leonard Berend.

Discuss Rural Phones At Denver Conference

MORE, BETTER and less costly telephones for rural America were endorsed by speakers recently at a general session of the field conference of the southwest and western electrical distribution areas, Rural Electrification Administration of the U. S. department of agriculture, at the Shirley-Savoy Hotel, Denver, Colo.

Three speakers discussed aspects of telephone development before questions on the telephone program were answered by a panel of eight experts.

"We shall make it our goal," said Richard A. Dell, chief of the telephone loans division, "to help rural people everywhere in this nation have the opportunity to enjoy good reliable telephone service which is greatly needed in rural areas."

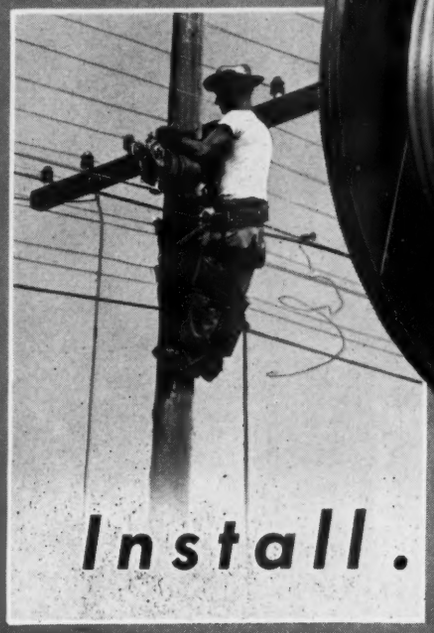
He added his hope that the telephone division will do a job through the years comparing favorably with what has been done by REA in its electric program.

Dell said that as of last May 30, REA had received 876 applications for telephone loans totalling about $175 million and that as of June 4 the administration had approved 186 allocations in thirty-nine states totaling a little over $68 million.

"It is highly significant", he added,

Chester C. Behrens (above), general results engineer for the Ohio Bell Telephone Co. has been named chief engineer of the company's Northeastern Area. Behrens, a native of Peoria, Ill., has been with Ohio Bell since 1925. Starting as an installer in Toledo, he has had extensive experience in the company's plant, traffic and engineering departments. In 1948 he became div'n. traffic supt. at Columbus.

SLASH SERVICE INTERRUPTIONS!



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Use cable made by General Cable—and forget service interruptions! The sheath of every length of this cable is *pressure-tested* against trouble-causing leaks, just before shipping. Cable available in all standard gauges and number of pairs. "Unit" design of large sizes groups the pairs, speeds splicing, saves money. Order General Cable *pressure-tested* cable—proved by 50 years of dependability.

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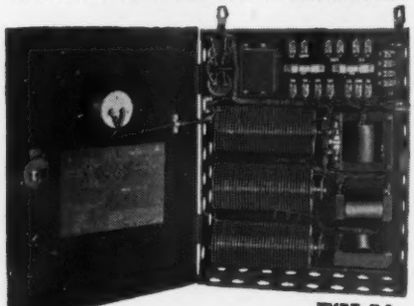

TYPE RA

The most economical telephone power supply is an Electrox Battery Eliminator

Powered from your regular 110-volt lighting system.

Electrox Eliminators provide smooth, hum-free D.C. of required voltage — eliminating batteries.

Automatic operation. Output voltage remains practically constant, regardless of current drain. When desired, provision can be supplied to switch to emergency power source automatically.

Battery chargers and battery eliminators available in sizes and capacities to meet every power requirement.

See your Electrox Jobber. Write for free Bulletin 1465.

*T.M. Reg.

RECTIFIER DIVISION
SCHAUER
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"that out of 143 loans approved to date (from the 186 allocations) advances have been authorized for only 75 applicants.

"In many cases applicants are waiting for action by state public service commissions. In some of these cases equity problems, title and related legal problems are holding up the authorization of advances.

"We believe that with the reorganization and the full-time assignment of field people to telephone work this phase of our program can be speeded up considerably. A great deal of progress has already been made. . . . One of the most important changes is provision for preloan engineering."

Speaking on construction, K. W. Benckert, acting chief of the tele-

(*Please turn to page 22*)

"Tid-Bits"

IN FORT WORTH, TEXAS, telephone people had to laugh recently when a woman telephoned a cab and the dispatcher radioed one standing a block away. Arriving in a matter of seconds, the woman told the driver: "*I'll not ride with anyone who drives as fast as you must have to get here so quickly.*" The company was forced to dispatch a slower cab.

IN ST. LOUIS, MO., a customer called service representative Jeanette Rueter to request 12 of the thick St. Louis telephone books. She was having a children's party and the kiddies weren't big enough to peer over the table top. "The directories would do the trick," the woman said.

IN SPRINGFIELD, MO., a sauntering church was of great concern to Major Harry Strissel, Springfield, Mo., Salvation Army commander. He called to report: "A church came down the street this morning and tore my telephone line down." "A WHAT came down the street?" demanded the astonished operator. "A church," chuckled Strissel. He explained that a large building, formerly a church, had knocked out his telephone line as workers moved it from one location to another.

KLEIN
Quality you can count on—FOR SAFETY... FOR SERVICE

Yes, safety and service are the two big reasons why Kleins are the choice of the man on the pole. Look for the familiar Klein trade-mark on pliers and climbers, safety straps and belts, lag wrenches and grips. It has been a trade-mark of quality "Since 1857."

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Write for your free copy of the Klein Pocket Tool Guide today!
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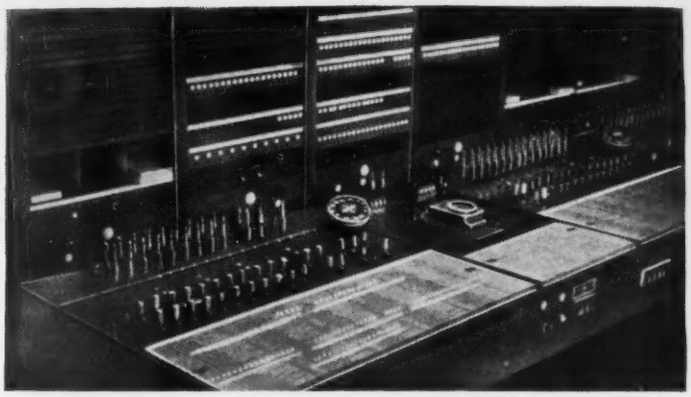
...works for you in important cost-saving ways



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MODEL 33
FOR SWITCHBOARD
MOUNTING - OTHER
MODELS TO MEET EVERY
INSTALLATION NEED

AUTOMATICALLY FIGURES TOLL TIME! With Calculagraph on the job, there is no need for time-consuming, service-slowing manual figuring of elapsed time. Calculagraph does it all quicker, easier and, most important, with complete accuracy.

ACCURATE TO THE SECOND! Calculations are accurate down to the last second. Authoritative and indisputable, they make it possible to collect all the revenue due on every toll call — a basic advantage in exchanges large or small.

PERMANENT PRINTED RECORDS! Calculagraph prints elapsed time on permanent toll tickets which make accounting methods simpler, more efficient. Toll tickets are easy to read, remain legible permanently and are available for reference at any time.

COMPLETE INFORMATION ON AUTOMATIC TOLL TIME CALCULATING AND RECORDING IS CONTAINED IN THE CALCULAGRAPH FILE CATALOGS . . . WRITE TODAY.

THE STANDARD OF ACCURACY SINCE 1892

CALCULAGRAPH COMPANY
HARRISON • NEW JERSEY

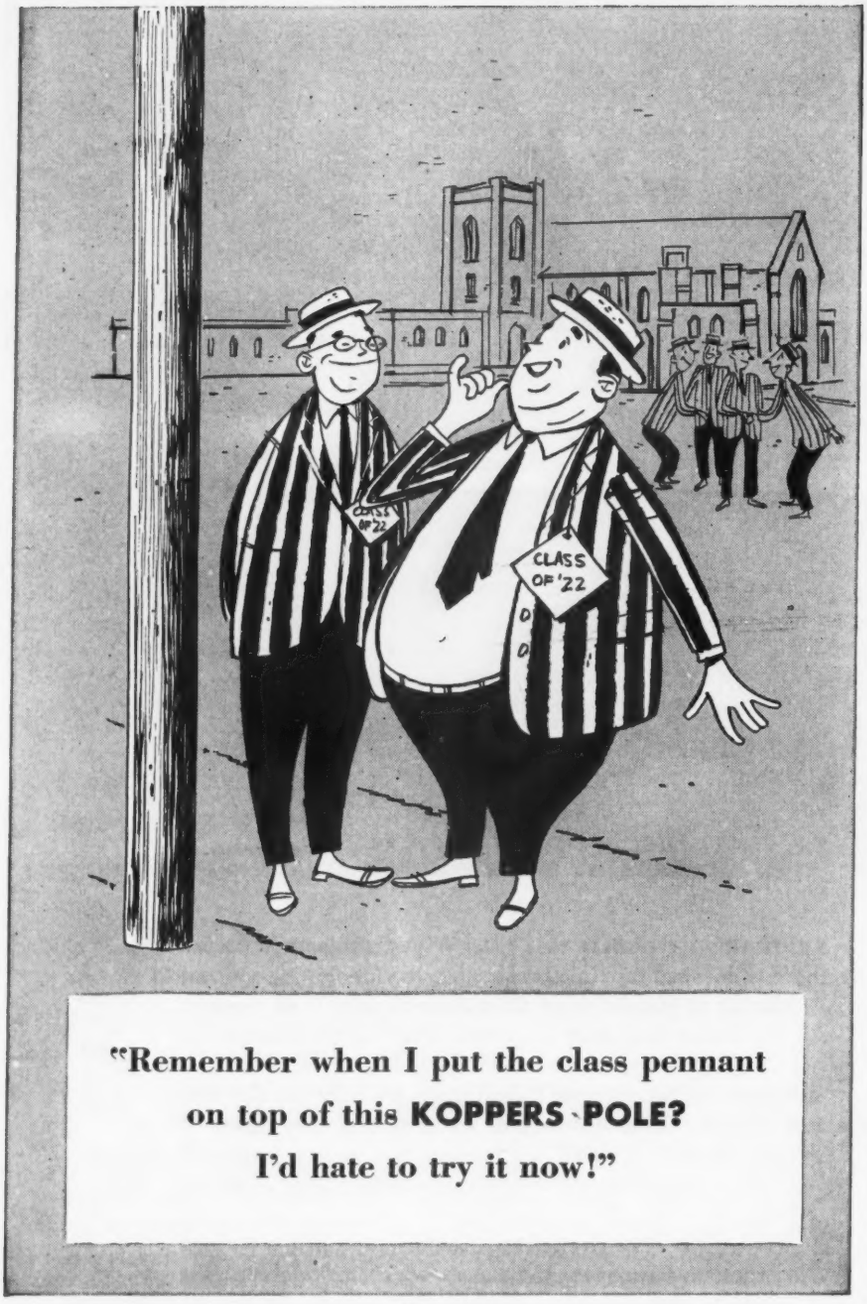
Please send copy of the new catalogs on automatic toll time calculating and recording.

NAME_____ TITLE_____

COMPANY_____

STREET_____

CITY_____ ZONE____ STATE_____



"Remember when I put the class pennant on top of this **KOPPERS** POLE? I'd hate to try it now!"

● An unfair comparison, perhaps, but this Koppers Pole is in much better shape than the "Old Grad."

Koppers Poles are famous for the way they *retain* their strength through the years. This strength-retention means less maintenance work and expense. It also cuts your replacement costs appreciably.

Specify Koppers Full-Length Pressure-Creosoted Poles. You'll get long and trouble-free pole service.

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KOPPERS PRESSURE-CREOSOTED WOOD

phone engineering division, said that high standards have been required because "our borrowers are located within the boundaries of one county or at most a few counties. One relatively local storm could cover the entire operating area of a company or cooperative."

But recently the safety factor has been reduced from a previous 1.33 to a figure of one and this change, especially as applied to buying requirements, "will result in a reduction in construction costs."

Bids coming in on units of outside plant construction were termed by Benckert "enough to scare a man out of a year's growth", and he added: "Unless we can find some way of lowering the unit labor cost, we are going to deprive thousands of people from receiving badly needed telephone service."

First Pole Set For New Indiana System

JUNE 26, 1952 marked the beginning of construction for the new dial telephone system of Eureka Telephone Co., Corydon, Ind. The rebuilding of the company's system in Harrison County has been made possible by a government loan from the Rural Electrification System.

The L. P. & H. Construction Co., Linton, Ind., which is subcontractor under the Weikel Construction Co. of Fort Wayne, set the first pole at Ramsey, Ind.

Company officials participating in the event were Claude A. Davis, president, who tamped the pole as Dr. W. E. Amy, vice president, shoveled in the dirt and manager Emil G. Miller, supervised nailing on of the "No. 1" pole number plate. Also present were C. Blaine Hays Jr., attorney for the company, Charles Welborn, construction superintendent for the contractor, Vernon Weddle, construction superintendent for the subcontractor and Richard Hammond, resident engineer for Chanaberry Engineering Co. of Louisville, Ky.

The buildings for five satellite exchanges with central office at Corydon have been completed. All automatic dial equipment for the exchanges will be furnished and installed on separate contract by Kellogg Switchboard & Supply Co., of Chicago, Ill.

North Dakota Co-op Gets 1st Federal Cash

The first actual money for construction of a large eight-county rural telephone system centered in Ellen-

(*Please turn to page* 82)

Workshop on wheels!

Put the service-utility body you need on an International Truck and you have a workshop on wheels. It's engineered and powered to go anywhere, any time, under any conditions.

What's more it will go economically and it will keep going that way for years. The powerful valve-in-head engine takes it easy on gas and oil. Extra years of like-new operation are engineered into every truck. And you can take comfort and ease of handling for granted.

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Look for these International exclusives:

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- The "roomiest, most comfortable cab on the road"—the Comfo-Vision Cab. One-piece Sweepsight windshield. New green-tinted, non-glare safety glass available.
- Super-steering system—more positive control. Wider front axles make possible full 37° turning angle for greater maneuverability.
- 115 basic models . . . everything from ½-ton pickups to 70,000 lb. GVW ratings. Chassis adaptable to a wide variety of body types.

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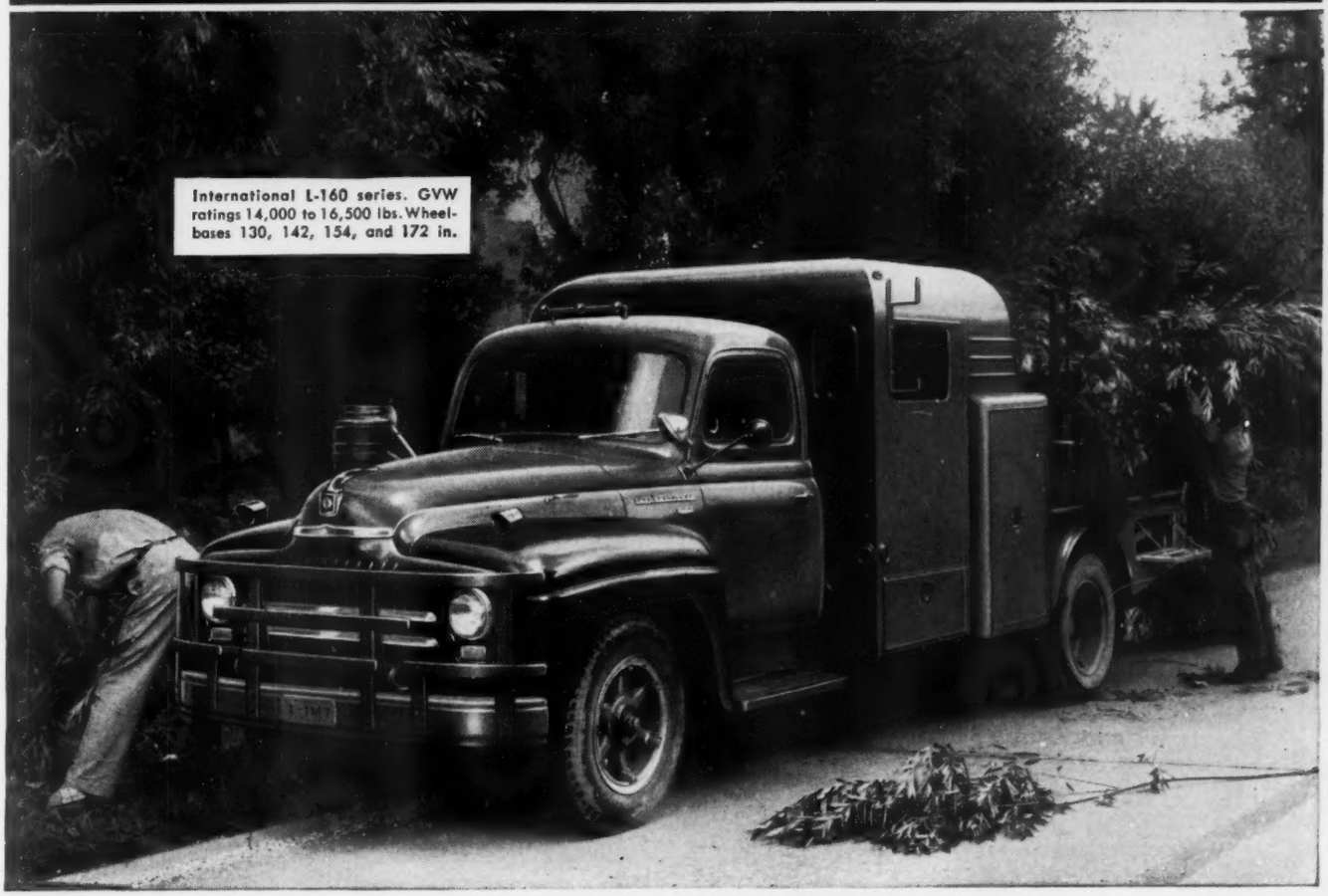
Better roads mean a better America

INTERNATIONAL TRUCKS

"Standard of the Highway"



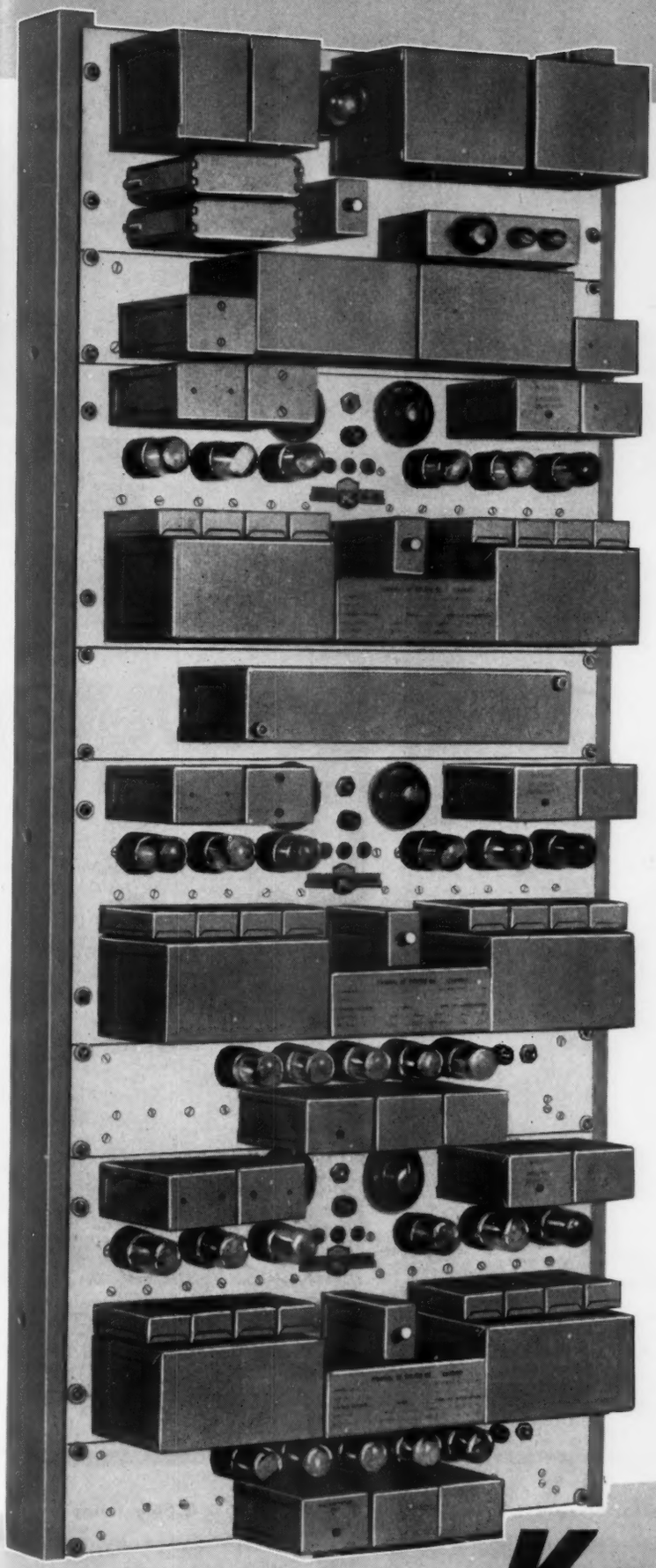
Installation and Maintenance *Simplified!*

with KELLOGG *Carrier*

NOW AVAILABLE *with* UNIVERSAL SIGNALLING

Kellogg *Transmitted* Carrier Systems can be installed and placed in service in minimum time—and maintained at minimum cost! These systems require no adjustment of oscillator frequencies or carrier leak! *Maintenance is simplicity itself!* . . . Since the carrier frequency is transmitted, measurements of terminal output and of the level of the carrier frequency received from the distant terminal may be easily and quickly made with a vacuum tube voltmeter without the use of a separate oscillator. Result: line attenuation at the carrier frequency being measured can be immediately determined and the problem of locating trouble is simplified to the nth degree.

UNIVERSAL SIGNALLING—Permits use in either dial or ringdown service, accomplished by strapping changes on the terminal strips. When connected for dial service, the signal unit is arranged to connect to a composite type trunk having T, R, A, B, E and M leads. In both ringdown and dial signalling, the frequency shift principle is used.



OTHER Advantages of KELLOGG Transmitted Carrier

Outstanding in design and workmanship, Kellogg Transmitted Carrier Systems offer you many advantages in telephony because they use the principle of transmitting the carrier frequency, instead of suppressing it.

NO SYNCHRONIZATION

Separate oscillators are not required in the receiving section of the carrier terminal — each sideband is demodulated by the same carrier frequency which produced it originally. With Kellogg, you will have no requirement for synchronizing or aligning oscillator frequency.

NO FREQUENCY DISTORTION

Kellogg Transmitted Carrier Systems are completely, continuously free of voice distortion due to frequency shift and speech is always clear. Why? Because voice frequencies cannot be shifted by a difference in oscillator frequencies.

NO CARRIER LEAK ADJUSTMENTS

You'll have no problem with carrier leak with Kellogg Transmitted Carrier Systems — and no adjustments for eliminating or minimizing carrier leak are required.

SIMPLIFIED, POSITIVE SIGNALLING

To provide ringdown service, ringing is accomplished by blocking the transmitted carrier frequency during the ringing period. In dial service, the transmitted carrier is shifted, using a frequency modulated signal unit. In both services, signalling may be accomplished over lines having attenuation values in excess of the allowable limits for the carrier talking circuit — simple, positive, foolproof! And no additional frequency bands are needed!

Send today for your free copy of "KELLOGG Type No. 5 Transmitted Carrier Telephone Carrier Systems." Get the facts— **and you'll get Kellogg!** Write Dept. 1-E-10

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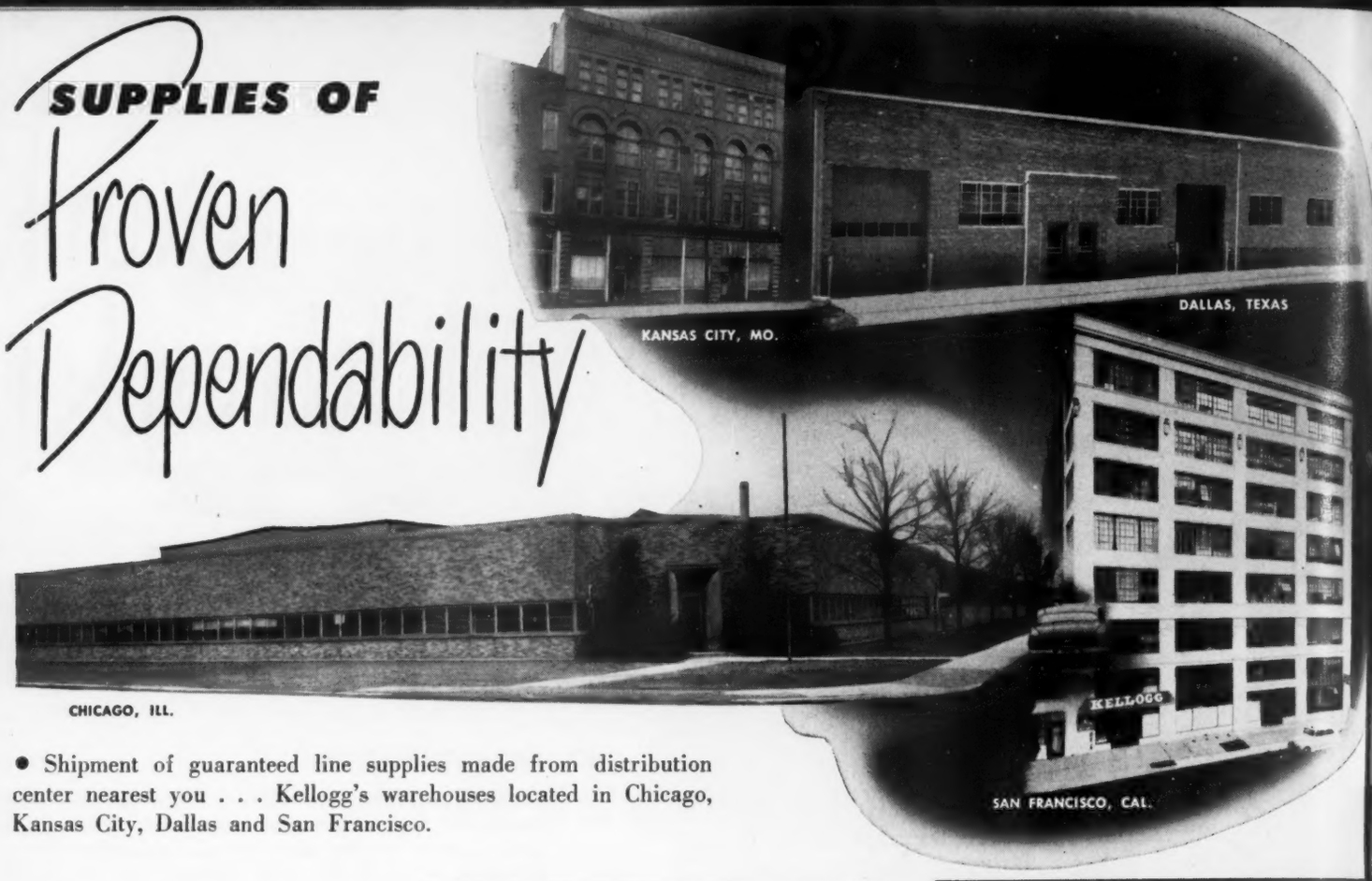

• Shipment of guaranteed line supplies made from distribution center nearest you . . . Kellogg's warehouses located in Chicago, Kansas City, Dallas and San Francisco.

The following nationally-known manufacturers of supplies for the independent telephone field are participating in the 1952 Kellogg Co-Operative Campaign.

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American Structural Products Co.

Ansonia Electrical Company

Bishop Manufacturing Corp.

Boston Woven Hose and Rubber Company

Churchill Cabinet Company

Continental Cross-Arm Co.

Cook Electric Company

Copperweld Steel Company

The Electric Storage Battery Co.

General Insulated Wire Works, Inc.

Gould-National Battery Inc.

W. A. Hammond Drierite Company

Indiana Steel & Wire Company

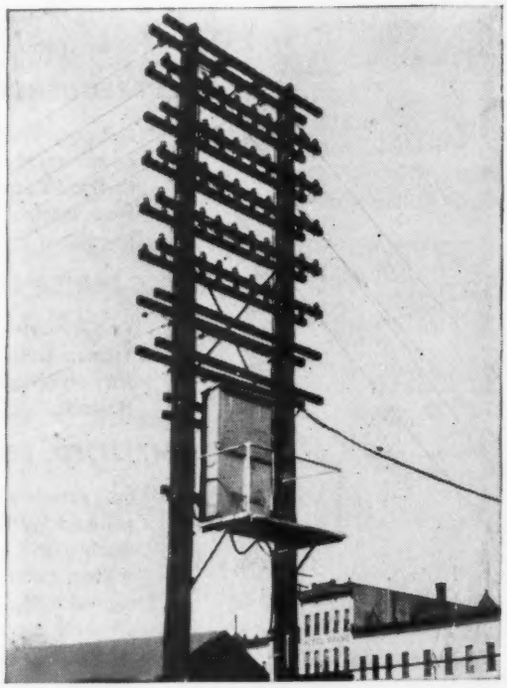
Kester Solder Company

Lorain Products Corporation

T. J. Moss Tie Company

National Carbon Company
A Division of Union Carbide and Carbon Corporation

National Telephone Supply Co.



Economy in Overhead Construction is assured when crossarms manufactured by the CONTINENTAL CROSS-ARM COMPANY, INC., are a part of your wire and pole installation. Crossarms are made of fully seasoned American wood —built to sound standards of dependability.

Long Life Expectancy is built into pressure-treated Southern Pine Poles and Crossarms. Carefully and thoroughly treated by AMERICAN CREOSOTE WORKS, INC., these poles have extra durability required for dependable service under the toughest climatic conditions.

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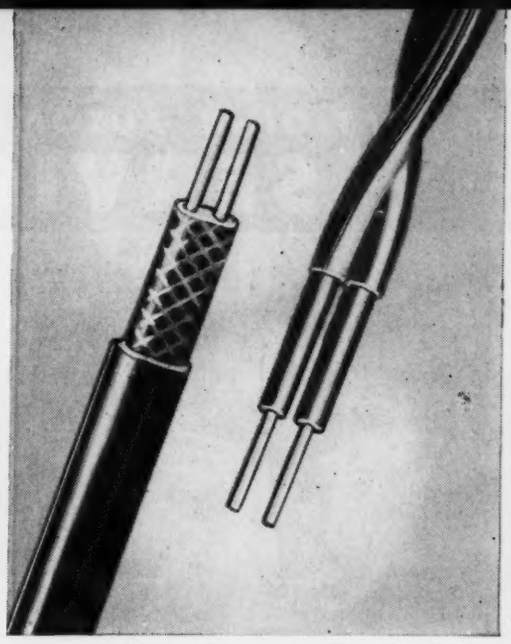
Modern Cable Saves Money 3 Ways—Ansonia Ankoseal, the modern all-plastic, lightweight cable costs less to buy in the popular sizes, costs less to install, costs less to maintain. Available for aerial, duct and direct burial use. Made by THE ANSONIA ELECTRICAL CO.



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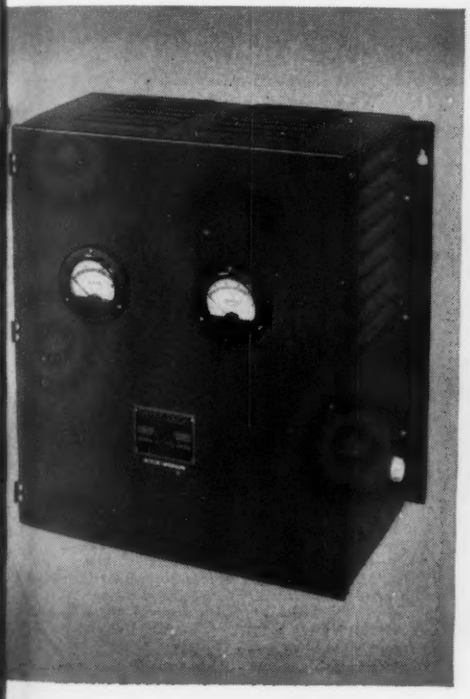

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Your Battery Problems are Solved when you put Gould Planté and Floté Batteries to work. Unique features of design cut maintenance and charging costs, lengthen life and reduce replacements. Made by GOULD-NATIONAL BATTERIES, INC., a leader in their field.

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EXPANDS VITAL DUTCH WEST INDIES COMMUNICATIONS!

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TOP: On Aruba island, off Venezuela, the Lago Refinery, a subsidiary of Standard Oil Co. of New Jersey, processes 480,000 bbls. of vital oil per day.

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LEFT: Refinery control room.

• Pedro Semeleer of Lago was taught Strowger Automatic techniques at the Automatic Electric Training School, Chicago, and trained in the field on outside plant work. Here he is shown (left, center) splicing cable.

(Photos courtesy Standard Oil Co. of N. J.)

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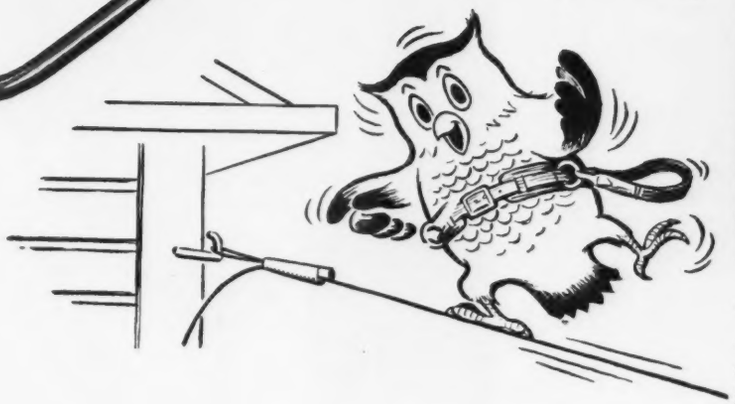

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The reason is simple . . . it's the precision, wedge shaped design that automatically tightens under tension for a positive, lasting grip that will not ease as long as tension is present. Regardless of the degree of tension, the generous friction area will prevent damage to the wire, whether twisted pair or parallel, plastic or neoprene.

They're easy to install. They do not damage wire or insulation . . . no sharp bends in wire . . . all wear is on the clamp. Wire swings freely at the tie . . . sagging is done before cutting. Save money and time by standardizing on "P" or "PS" Clamps, Reliable products.

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Reliable

Telephone Protective and Terminal Equipment for all Station, Line and Central Office Needs.

OVER 45 YEARS SERVICE TO THE TELEPHONE INDUSTRY

A MESSAGE
FROM THE PRESIDENT OF IT&T
to the Independent Telephone Industry

IT IS with great satisfaction that I can announce to our good friends and customers in the independent telephone industry the consolidation of the sales organizations of KELLOGG and FEDERAL to better serve the industry.

Effective September 1st, the Kellogg Switchboard and Supply Company becomes the sales representative of the Federal Telephone and Radio

Corporation in the independent telephone field. The immediate benefit of this consolidation on the part of these two subsidiaries of IT&T will be a centralized and expanded source of supply. In addition to its own quality line of equipment and supplies, KELLOGG will now be able to offer its customers |equipment manufactured by FEDERAL, including step-by-step and rotary automatic dial switching equipment, PABX systems, carrier terminal equipment, and PTM microwave radio relay links.

The representation of FEDERAL by KELLOGG will make available to the industry—in addition to a wider range of equipment through a single supplier—a greater number of basic patents, more extensive manufacturing facilities, and the resources of IT&T's world-wide research organization.

KELLOGG, for more than half a century, has helped independents to grow, prosper and modernize; and now, with FEDERAL and IT&T facilities added, becomes an expanded and strengthened source of supply for all independent telephone companies, no matter how large or how small.

William H. Harrison

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"Mrs. Jackson calling Doctor Marsh"

THIS IS A NORTH "ALL-RELAY" BOARD, destined to be the throbbing heart of a typical American community. If you look closely you may see the group of relays which some night will click through the call from "Mrs. Jackson" to "Doctor Marsh"—upon which a life depends.

The characters shown are not even reasonable facsimiles of "Mrs. Jackson" or "Doctor Marsh". They are inspectors on the test floor of the North factory. They are making facsimile calls through every trunk and link and line, even to the point of simulating transmission characteristics of the average outside plant. Hundreds of thousands of hours of such "insurance" are invested at North plants just so that YOU can KNOW this for certainty . . . No matter how many thousands of calls this board may handle for the butcher, the baker, or defense goods maker; when any "Mrs. Jackson" calls any "Doctor Marsh" these relays will speed the fateful call exactly as they proved they would before they left Galion, Ohio.

You can depend on that in a North "All-Relay" system.

NORTH

THE NORTH ELECTRIC MANUFACTURING COMPANY

Originators of ALL RELAY *Systems of Automatic Switching*

655 South Market Street, Galion, Ohio, U.S.A.

EDITORIAL

Running Hard To Stay In One Place

DURING THE approximately 10 years that have elapsed since the beginning of World War II, the telephone industry has worked hard to keep itself, from the standpoint of earnings and financial well-being, as well off as it was before.

There can be a great deal of question as to whether the industry has succeeded. There are in fact many indications that it has not.

From time to time, in these editorials, we have pointed out significant facts regarding the present and prospective status of the Independent branch of the telephone industry.

There are now available for publication, some equally significant facts regarding the situation of the Bell Telephone System.

Our Washington Reporter, Mr. Roland Davies, who is also editor of the weekly "Telecommunications Reports", has compiled and published in two sections in those Reports (issues of July 14 and 21, 1952), a comprehensive study of the Bell situation, and has reached some important conclusions regarding that situation.

This study reaches these significant conclusions:

> "Although the Bell System has rewritten telephone history in the past 10 years . . . with expansion of its facilities and services dwarfing that of any similar period, it has been forced from a financial standpoint to rely on past performance and reputation, rather than a solid base of earnings geared to its present operation and plant.
>
> "By almost any of the customary indices—comparison of the real value of dividend rates with those of preceding years, and of book equities, rate of return on capital, real value of stock in terms of a decade ago, purchases of stock by investment trusts and institutional investors, and other standards—the position of American Telephone & Telegraph Co. stock has deteriorated over the past decade."

The report describes at some length the progress of the Bell companies in obtaining higher rates, including "the frequent lengthy delays in regulatory procedures, and the use of regulatory formulas in fixing rates which have failed to keep pace with economic developments", as well as the constant dwindling of a company's net earnings while it is going through the long drawn-out regulatory process for obtaining needed higher rates. It makes this significant statement:

> "By and large, regulatory commissions have permitted sufficient earnings to offset much of the postwar increase in operating costs and taxes. *What has not been recognized generally is the greatly increasing investment per telephone, and the need to fix rates which will permit the business to earn a reasonable return under such conditions*". (The italics are our own.)

There, we think, is the basic difficulty of both Bell and Independent companies. It is one which will become more and more aggravated as the cost of telephone growth continues to increase, unless commissions recognize it and deal with it as an inescapable factor in the cost of supplying telephone service.

In our editorial, "The High Cost of Telephone Growth" (Telephone Engineer & Management, May 15, 1952) we discussed the effect upon Independent telephone companies of the greatly increased cost of adding telephones. To many Independent companies this cost, even a year or so ago, was averaging around $400 per added telephone.

From the report we have been discussing, some figures are available as to the cost to the Bell companies of adding telephones:

Shortly after V-J Day the average investment per telephone in the Bell System was $254. But, for the period from January 1, 1945 to April 1, 1952, the average investment per added telephone was $354. And, for the year ending April 1, 1952, the average investment per added telephone was $451.

There will be no end to this climb in the cost of adding telephones as long as the cost of materials remain high and the cost of labor continues to grow.

This is, we think, the really basic problem of the telephone industry—and also of other utility industries. Unless something is done about it, the earnings and financial situation of the industry is weakened day by day.

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For the operating company interested in regular earnings, a Stromberg-Carlson Convenience System ranks with bonds, stocks and money-in-the-bank. Its initial cost is low—its service life amazingly long —its time-saving, confidential features appeal to alert business executives —and its placement on a subscriber's desk justifies increased rates.

Your Stromberg-Carlson representative will be glad to work with you in an analysis of likely Convenience System prospects in your own service area and to help you prepare a "sales" presentation to them.

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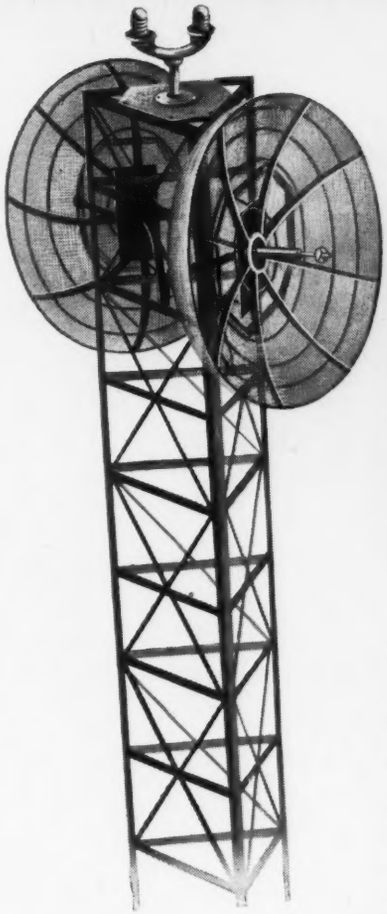
-Because it's Simpler!



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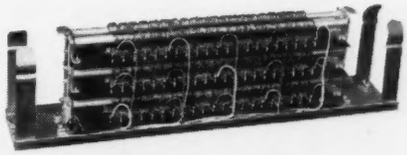
SIMPLICITY... that's the basis for the greater efficiency, reliability and economy of maintenance of Federal Pulse Time Modulation Microwave ... for complete communications over any distance or terrain ... without new line construction!

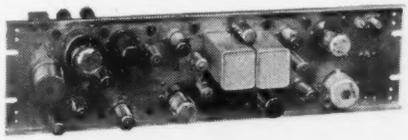
Through simpler equipment—requiring *fewer* tubes—Federal PTM meets the telephone industry's needs for extra circuits for trunks and toll ... distant rural expansion ... extensions to new developments ... extended area service ... mobile radio ... broadcast relay, facsimile, teletype and other leased wire services ... via dependable, high-quality, stormproof radio facilities.

Get the facts about Federal PTM's system-wide superiority and proved performance ... about Federal's more than 20 years of experience in microwave engineering, planning and installation. Write today to Dept. H-748.

Federal PTM Delay Line
—"Heart of the System"

Remarkably compact and efficient ... *has no tubes.* Maintains absolute synchronization between channels ... provides non-shifting channel selection ... eliminates crosstalk.





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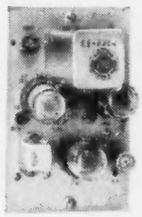
Supplies synchronizing pulse to delay line for simple, automatic channel synchronization, eliminating elaborate individual channel tuning provisions. Uses *fewer* tubes ... greatly increases system dependability.



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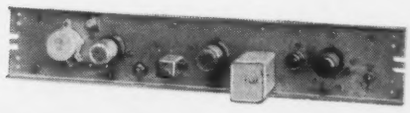

Federal PTM Pulse Restorer
A valuable insurance factor in longer systems. Automatically cuts in and converts repeater into temporary terminal if adjacent repeater fails ... maintains communication over remainder of system.

MICROWAVE MOVIE: Be sure to see Federal's new 16 mm. sound-color motion picture *"Microwave for Modern Telephony."* Prints shipped without charge for company personnel or organization showings. Write to: Film Distributing Dept.

FEDERAL TELECOMMUNICATION LABORATORIES, Nutley, N. J. ..... a unit of IT&T's world-wide research and engineering organization.

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FEDERAL TELEPHONE & RADIO — FTR — An IT&T Associate

Communications Equipment Division (CED) to retain indentity as separate unit of NPA . . . Ralph Lucier named CED consultant.

Washington Bureau Reports

By ROLAND DAVIES and FRED HENCK

IN A FEDERAL government organizational matter of rather direct concern to the Independent telephone field, the National Production Authority's Communications Equipment Division has received assurances that it will retain its identity as a separate unit of NPA.

This is regarded as distinctly good news by Washington observers who had been advised earlier that reductions of funds available to NPA might well force the consolidation of the NPA communications group with one or more other NPA divisions with little or no relationship to the communications industry.

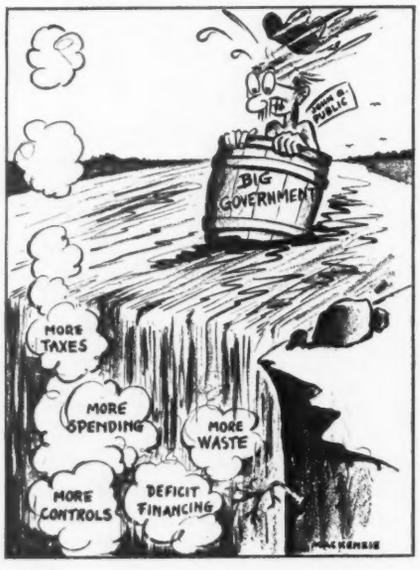
Seldom in governmental circles have communications matters been handled by a group more familiar with the operations of the industry than in NPA. To start with, of course, the Directors and Deputy Directors have been top-notch management people from Bell System and Independent telephone companies. In addition, as the result of previous background, association with the industry people who have served in Washington, and specialization in the communications field, the government career people who staff the division have been well acquainted with the industry and its problems.

No government agency ever wins many kudos from the members of the public it deals with, and no one likes controls or shortages. As a result, there no doubt are many officials of the telephone companies who have some criticism of the NPA group. When dealings with the NPA division, however, are contrasted with those with agencies not having real communications specialists, there is little doubt that the NPA organization turns up well on the plus side of the ledger.

At any rate, most observers are of the view that continuation of the NPA division as a separate unit—although it necessarily will have a reduced staff under the reorganization plan now being finalized—is a distinct gain over a setup in which the division might have consolidated, for example, with the NPA Electronics Division and its emphasis on broadcasting and television.

Another of the growing group of Independent company officials who have served in Washington is now on his way to the capital. Ralph F. Lucier, President and General Manager of the United Utilities, Inc., properties in Indiana and Ohio, has been selected as a consultant to the Communications Equipment Division, and will begin his period of service Aug. 18.

WHERE'S IT TAKING US?



Meanwhile, E. C. Roys, Vice President and Chief Engineer of the General Telephone Co. of Pennsylvania, is winding up his NPA tour about Sept. 1. Mr. Roys has been formally designated as Director of the NPA division, a post in which he has been acting since William M. Day, Vice President and General Manager of the Michigan Bell Telephone Co. on leave, was tapped for another NPA assignment.

Mr. Roys will be succeeded as the head of the division by C. W. Potter, Vice President and General Manager of the Indiana Bell Telephone Co., who began working with the NPA division early in August.

The incoming consultant, Mr. Lucier, is well-equipped to make substantial contributions to the NPA group. He is a veteran of 32 years in the telephone field, beginning his career with the United Telephone Co. of Kansas, a predecessor of the Southwestern Bell Telephone Co. He worked his way through the ranks as a commercial representative, local and district manager, and in rate case activities.

Joining the United Utilities organization, the third largest group of Independent operating companies, he became vice president and general manager of the Indiana and Ohio group in 1935. Five years later, he was named president and general manager of the organization.

The companies headed by Mr. Lucier are the United Telephone Co.,

Inc., the Jasper, Ind., Telephone Corp., and the Ohio Telephone Service Co., with the group headquarters at Warsaw, Ind. They operate about 80,000 telephones through 95 exchanges.

Mr. Lucier, a native of Abilene, Kans., was a high school classmate of General Dwight D. Eisenhower, and was a teammate of General Eisenhower's on the Abilene High School football team.

The Steel Situation

ALTHOUGH hardly a day passes without a new order by some government mobilization agency on another phase of the steel situation, and new reports and rumors continue to spring up, the general outline of the situation appears about the same as reported by Defense Production Administrator (DPA) Henry H. Fowler in a statement soon after the steel walkout ended.

In his statement, Mr. Fowler declared that "We may maintain the validity of controlled materials plan orders on the books and allotments authorized before the strike." Amplifying the comment, he said in effect that existing orders and steel "advances" were made in the interests of the national economy and the defense program, that it is not advisable to upset them, but that a long stretch-out of the allocations made, in the same quantity, over as long a time period as necessary to permit steel production to catch up with defense needs, will be required.

Thus, the setback of advances, on the basis of the situation's arithmetic, will probably be greater than the two-month period during which there was no appreciable steel production. Defense-supporting industries will receive less than their normal proportion of steel during the next few months, while direct defense needs are filled with upwards of twice their usual amount of steel to make up for the loss, and while atomic energy, machine tool, and tin plate (for preservation of perishable foods) are given priority.

Mr. Fowler declared that "we must avoid granting any additional allotments for the fourth quarter." He added that allotments for the first quarter of next year—where the severest pinch, allotment-wise, is anticipated—must be adjusted "downward to take into account excessive carry-over, so that surpluses of CMP tickets created because the strike cut supplies can be absorbed, and the system put back into the balance of supply and authorized demand" that existed prior to the nationwide steel strike.

Coming Conventions

"There has never been a time . . . when it was more necessary for telephone people to take common counsel upon common problems."

Michigan Independent Telephone Association, Olds Hotel, Lansing, Sept. 19.

Arkansas Telephone Association, Arlington Hotel, Hot Springs, Sept. 15 and 16.

Tennessee Telephone Association, Hotel Hermitage, Nashville, Sept. 17 and 18

Rocky Mountain Telephone Association, Newhouse Hotel, Salt Lake City, Utah, Sept. 18 and 19.

United States Independent Telephone Association (annual convention), Conrad Hilton Hotel (formerly the Stevens). Chicago, Oct. 13, 14 and 15.

North Carolina Independent Telephone Association, Carolina Hotel, Pinehurst, Oct. 23 and 24.

Georgia Telephone Association, Henry Grady Hotel, Atlanta, Oct. 27 and 28.

South Carolina Independent Telephone Association, Clemson House, Clemson, Oct. 30 and 31.

Virginia Independent Telephone Association, Roanoke Hotel, Roanoke, Nov. 6 and 7.

Alabama-Mississippi Independent Telephone Association, Jefferson Davis Hotel, Montgomery, Ala., Nov. 10 and 11.

Florida Telephone Association, Orange Court Hotel, Orlando, Nov. 13 and 14.

South Dakota Telephone Association, Cataract Hotel, Sioux Falls, Nov. 13 and 14.

Oklahoma Telephone Association, Tulsa Hotel, Tulsa, Nov. 20 and 21.

"There is no quick, easy way to the acquisition of knowledge . . . but at a convention there will be ready-made answers to perplexing problems."

DPA Announces Four-Year, $50 Million Expansion Goal For Western Union

AN EXPANSION goal for the domestic telegraph system of the Western Union Telegraph Co. of $50 million capital investment in new plant and equipment for the four years ending Dec. 31, 1954, has been established by the Expansion Goals Staff of the Defense Production Administration (DPA).

Twenty million dollars of the total program is of a nature to be considered for government assistance through DPA's rapid tax amortization plan, the agency said, and the overall project points to the addition of approximately 640,000 circuit miles to the 3,060,000 circuit miles the telegraph company was operating at the end of 1950.

The $50 million plan, essentially one of modernization and mechanization of the domestic telegraph facilities, is designed to effect greater operating economies, as well as increasing the speed of Western Union service and the company's ability to handle larger loads.

The four-year goal was developed along lines previously set up by the Defense Electric Power Administration for private electric utility companies, and provides for rapid tax amortization of a base 25% for installations that were scheduled to be completed in 1951 and 35% for installations slated for completion in 1952 and later.

It also includes an allowance for overdevelopment above a normal growth trend computed at the rate of 10% for each year of the excess construction, starting from mid-1953 for installations made before that date and from the end of the year in later periods. Except for unusual circumstances, DPA decided, the total certification for any installation is not to exceed a 65% ceiling.

A plan submitted by Western Union for capital expenditures includes estimates of $10,211,000 for 1951, $10,700,000 for 1952, $16,700,000 for 1953, and $12,200,000 for 1954. According to the telegraph company's estimates, the money for the four-year period would be allocated $533,000 for radio beam facilities; $27,684,000 for private line leased and carrier facilities; $7,339,000 for reperforator equipment; $17,152,000 for tie lines, including desk fax and tele-printer equipment; and $5,113,000 for miscellaneous investments—a total of $57,821,000.

The Telephone Looks To The Future

"What has been responsible for our growth? Where are we heading? What added responsibilities and opportunities await us?"

By GEORGE L. BEST
Vice President, American Tel. & Tel. Co.

(Reprinted from The Bell Telephone Magazine)

THE FUTURE will be full of added responsibility, opportunity and great challenge.

IN THE RELATIVELY short time since World War II, the telephone business has been going through the most spectacular period of expansion in its history. Within the past decade the Bell System has grown more than it had over the entire previous 65 years, and the pace is still rapid.

It isn't necessary to recount here the hundreds of new central offices, the thousands of miles of new cables, the millions of telephones, and the billions of dollars of added capital investment which have gone into the Bell System in the past few years. These are well known.

What seems important is to pause now long enough to ask ourselves what has been responsible for this growth, where we are heading in the future, and what added responsibilities and opportunities this tremendous expansion is bringing us. That the future will be full of problems we can be sure. That it will be full of opportunity, and great challenge is equally certain.

Since the present period is simply one phase of the longer history of our business, we can probably get a better perspective of what is happening today if we view it as simply one chapter in our progress. And what is happening in our business, of course, is only one phase—an extremely important one—of the social and economic progress of the country as a whole.

As a background, then, for understanding the recent past, and so preparing in a measure for the years to come, let us return briefly to the days before the telephone—to the time when, if a man wanted his words understood farther than he could shout, he had to go or send. That is only seventy-five years ago.

Before the Telephone

AT THE TIME of Bell's invention, only seven years had elapsed since the golden spike was driven in Utah, signalizing the completion of the first transcontinental railroad line, and a large part of the great era of railroad building still lay ahead.

While there had been in this country a steady movement westward from earliest times, nearly half the people still lived in the states along the Atlantic Coast, and four-fifths of the population was located east of the Mississippi.

The river steamer and canal boat still handled a large

"Perhaps the most basic social and economic change is the far greater dependence we now have on other people."

part of the long distance transportation of people and goods. Outside of towns, roads were bad or non-existent. The earliest automobiles were two decades off, and airplanes were only a dream in the minds of a few visionaries.

Communication near by was generally by personal visit or messenger: and to places farther away it was by letter or, on matters of greater urgency, by telegraph.

We were then largely a rural people. About three-fourths of the country's inhabitants lived on farms or in villages and very small towns.

The incandescent electric light had not yet made its appearance, and lighting was usually by oil lamps, except for some larger communities where illuminating gas was available. Heating and cooking were mostly by wood or coal, and the fireplace often did both. Housewives, almost without exception, baked their own bread and many churned their own butter. Fruits and vegetables "in season" came from their own gardens or from nearby farms, and at other times were the product of their own preserving and canning.

Community Life

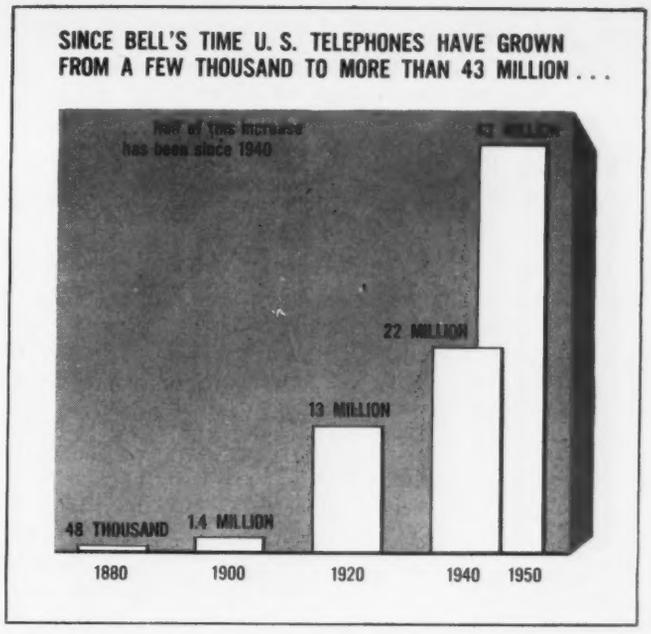
IN MOST communities, the only place to shop was at the general store. The larger places boasted such specialized establishments as grocery, drygoods, and hardware stores; but even there the customer found little choice in styles and grades of goods.

Most manufacturing was carried out on a small scale, in local shops and plants which got much of their materials and supplies from nearby areas. In many factories, hand tools and labor were still an important part of production. People themselves, with the aid of the local blacksmith, could usually repair the normally simple machinery when it broke down.

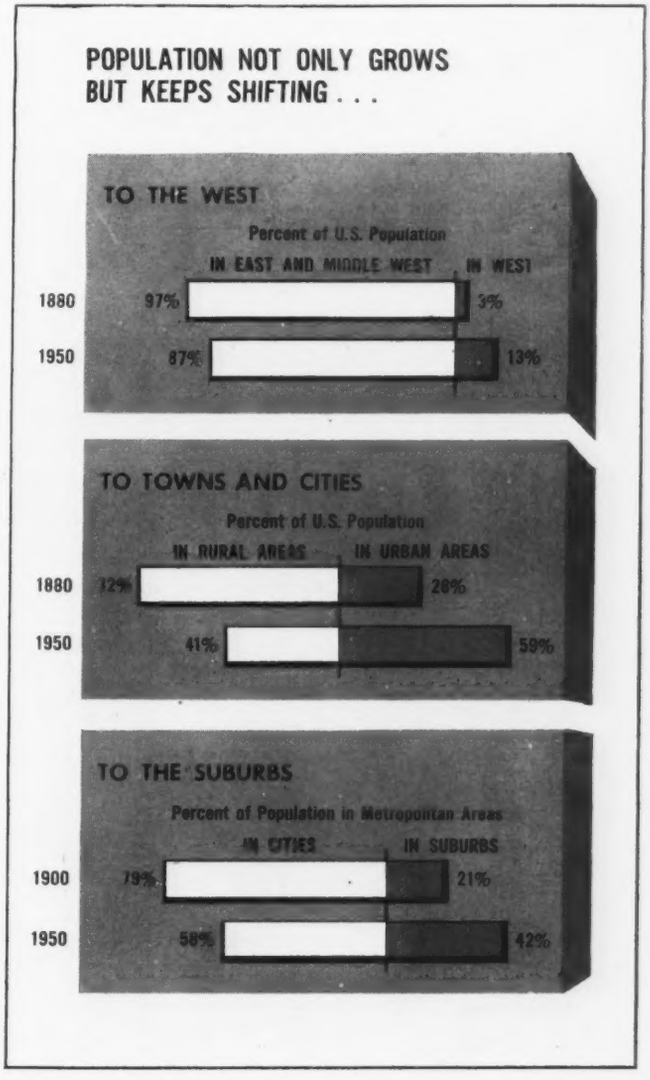
There was nothing corresponding to our present-day radio, movies, and television. To the extent they could, people created their own forms of entertainment. They had not much time to devote to recreation, however, because adults and children alike were busy most of the time at their work and doing the necessary chores.

Picture then, a society in which people lived and worked in more or less self-contained communities—and within those areas were largely dependent on their own efforts.

Picture, too, a pattern of home and business life in which there was little need to travel extensively, or to communicate except occasionally beyond a very limited



WITHIN THE past decade the telephone industry has grown more than it had over the entire previous 65 years.



THE PROPORTION of people who live in urban and suburban communities has risen from a scant 25% in Bell's youth to over 60% today.

area. And with long hours of work there was little time to devote to social contacts and recreation.

This, in brief, was the life our grandparents knew in the United States three-quarters of a century ago.

The Transition

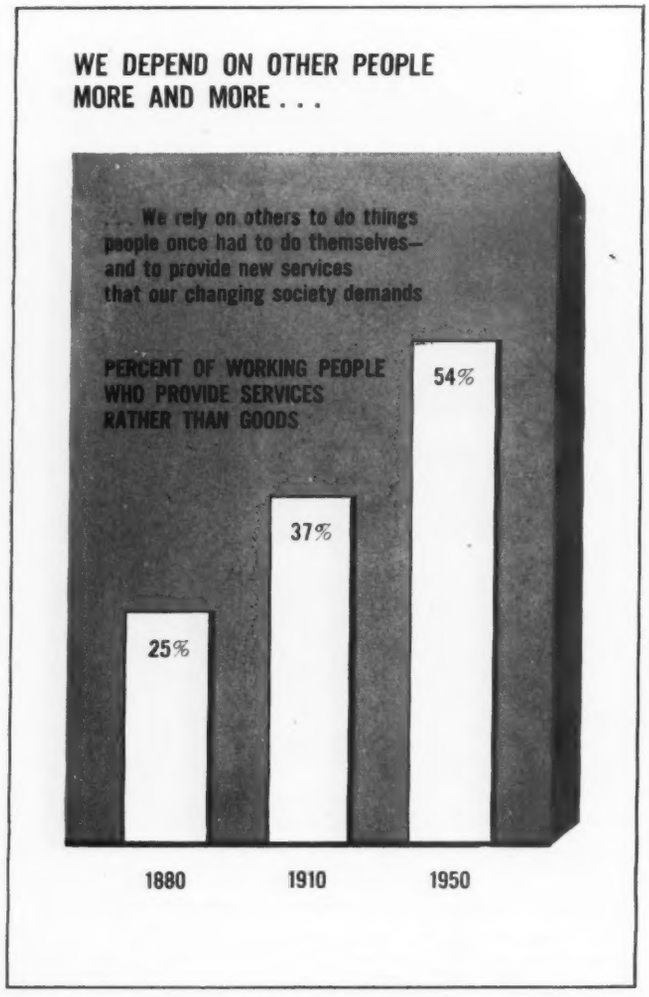
THE CHANGE which has taken place within the memory of many now living is astounding.

Our economy is no longer predominantly agricultural but has become increasingly industrial. The proportion of people who live in urban and suburban communities has risen from a scant 25 per cent in Bell's youth to over 60 per cent today. During the same period there has been a great growth and fanning out of population over the entire nation.

Beyond this, so greatly have our methods of production —both agricultural and industrial—improved, that a larger and larger proportion of our people can now devote their energies to providing a wide range of services. These include utility service of all types, increased facilities for education, new and expanded facilities for health and recreation, and a myriad of others which aid us in our homes and in our jobs.

In the home there is far less drudgery. True, we do not have the help of anywhere near as many domestic servants as before. However, there is not the same need for them—for there is a convenient appliance for doing almost everything, and the goods available in the modern store have enormously simplified the job of the housewife. Add to this a telephone that brings the family speedily within speaking distance of practically everyone, an automobile, an oil or gas burner, a radio, and a television set, and you come up with a way of life such as our grandparents would never have dreamed of.

The change which has taken place in the conduct of business is no less spectacular. Business operations have become vastly more far-flung and specialized, and markets for goods have become literally nation-wide. Factories can now obtain machinery and supplies and can subcontract work from one end of the country to the other, and can do these things with less time and effort than it used to require to do business with people nearby.


WE DEPEND ON OTHER PEOPLE MORE AND MORE . . .
. . . We rely on others to do things people once had to do themselves— and to provide new services that our changing society demands
PERCENT OF WORKING PEOPLE WHO PROVIDE SERVICES RATHER THAN GOODS
25%
37%
54%
1880
1910
1950

The Significance

PERHAPS THE most basic social and economic change in all this—certainly the most evident one—is the far greater dependence we now have on other people.

In the home, the new aids available to the housewife have naturally encouraged her to abandon former skills in the kitchen and elsewhere around the house. Father no longer attempts to repair the sort of things he once did or to undertake the many odd jobs he used to be called on to perform.

Businesses too, would have to do some pretty radical readjusting to carry on without the constant flow of help they get from other industries, oftentimes far distant. Specialists are our main reliance today.

All of the new things at our disposal have contributed to a more efficient and pleasanter way of life. They have given us more opportunity to broaden our social contacts, both in number of acquaintances and in the distances over which they are scattered. But, inevitably, they have made us rely increasingly on assistance from others.

Clearly, the telephone is contributing in a very significant way to this important social and economic change. In fact, it would be hard to visualize without the telephone many of the things which we accept as commonplace today. The tempo and widespread nature of business operations depend heavily on it. Similarly, home life would be quite different for most people without the aid it provides. And the telephone is playing an increasingly vital role in both military and civil defense.

To sum it up, we could not possibly depend on others, as we now do in our daily lives and actions, if we could not surely and quickly reach those on whom we rely, when we need them. The telephone enables us to do this.

The other face of the coin is that the great extension of business and social interests which have come with the development of our present way of life has had a pronounced influence on the use of both toll and local telephone service. This is the reason the Bell System has grown.

The Recent Past

WITH THIS as a long-term background, let us now look a little more closely at the rapid changes which have taken place in recent years.

It is apparent that most of the causes of the great expansion in telephone service which we are experiencing are not basically new. The same broad influences we have seen since the beginning of the business have continued to affect us over the more recent past.

In addition, some new factors have entered the picture

to give an extra spurt to the growing importance of telephone service in our lives.

For one thing, there has been a remarkable upsurge in population growth. In the 1940's, the increase was numerically the greatest in the country's history. It reflected a sharp rise in the birth rate from the low levels of the depression years, along with a continuation of the long downward trend of death rates.

Another important element is the change which has taken place in the last decade or so in the level and distribution of income. Not only has the total income of the people risen at a much more rapid pace than ever before —even after allowing for the rise in prices—but a much greater part of the increase has gone to people in the lower income brackets. The effect, naturally, is that more people are able to have more of the things that add to the comforts and enjoyments of living.

What is more, in this period of rising prices the rates for telephone service have not gone up nearly as much as the prices of most other things. Consequently, telephone service is relatively more of a bargain than ever.

And last but by no means least is the accelerating rate of what, for want of a better term, we call the "telephone habit." This has been a growing force from the beginning of the business. But to cite just one example, the amount of time the younger generation spends at the telephone doing homework and conducting social affairs will tell us that something new and powerful has been added that did not exist when most of the readers of this magazine were teen-agers or younger.

These are the things which have combined to give us the current upsurge we have been and are experiencing in telephone growth.

The Setting for Tomorrow

WITH SUCH a picture of past and present, the outlook for this business never seemed more promising.

We should not lack potential customers. Continued rapid growth in population, at least for some years, appears to be a reasonable expectation. There should be more homes, then, for this reason as well as to ease the war-time housing shortages which have never been fully relieved. Continued improvement in health and medical knowledge will mean that more people will live longer; and extension of pensions and broadening of Social Security coverage will mean that more elderly people will be able to maintain homes of their own.

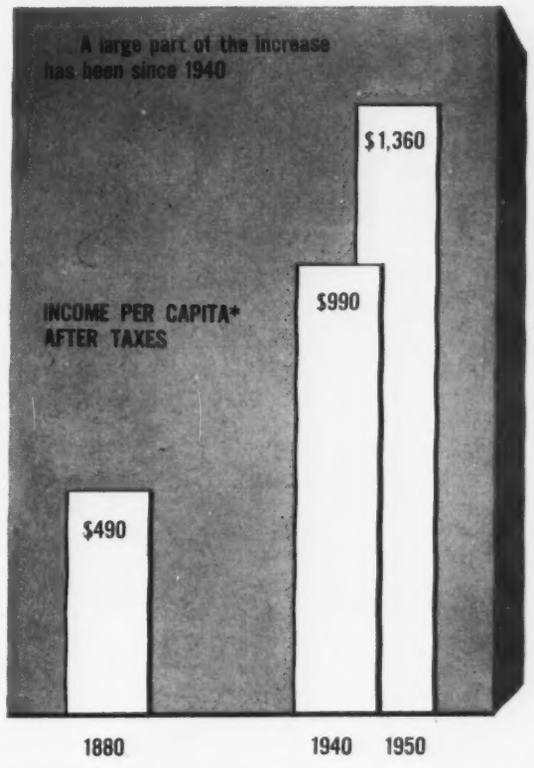
The spreading out of population toward less developed areas of the country and the movement to the suburbs bid fair to continue. Decentralization of industries goes on apace.

As a nation, we are greatly expanding our productive capacity—particularly at this moment under the pressure of defense preparations. This, and our never-ceasing American urge to find better ways of doing things, should mean continued progress over the long run toward higher levels of national income, greater purchasing power of the people, and rising standards of living—(even granted that for one reason or another there may be temporary set-backs).

In addition to these, there is no sign of any let-up in the two important social and economic influences on our business which have already been cited. Our dependence

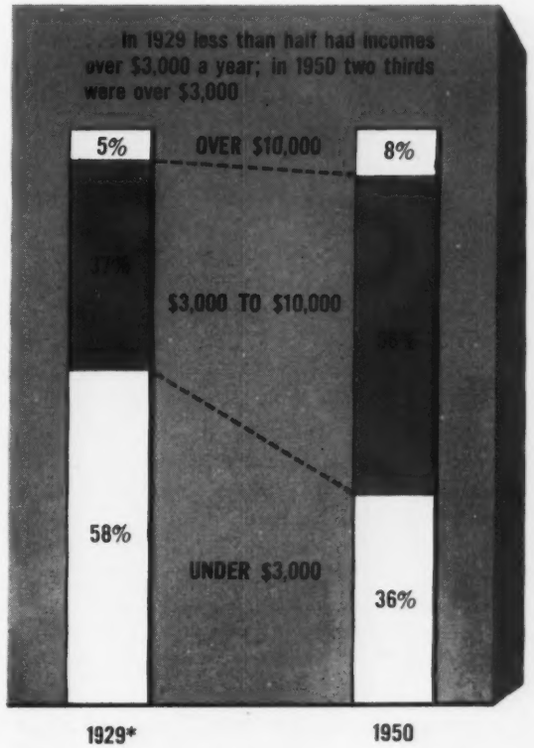
(*Please turn to page* 88)

PEOPLE HAVE ALMOST THREE TIMES AS MUCH MONEY TO SPEND . . .



*1880 and 1940 measured in dollars that have the same buying power as 1950 dollars.

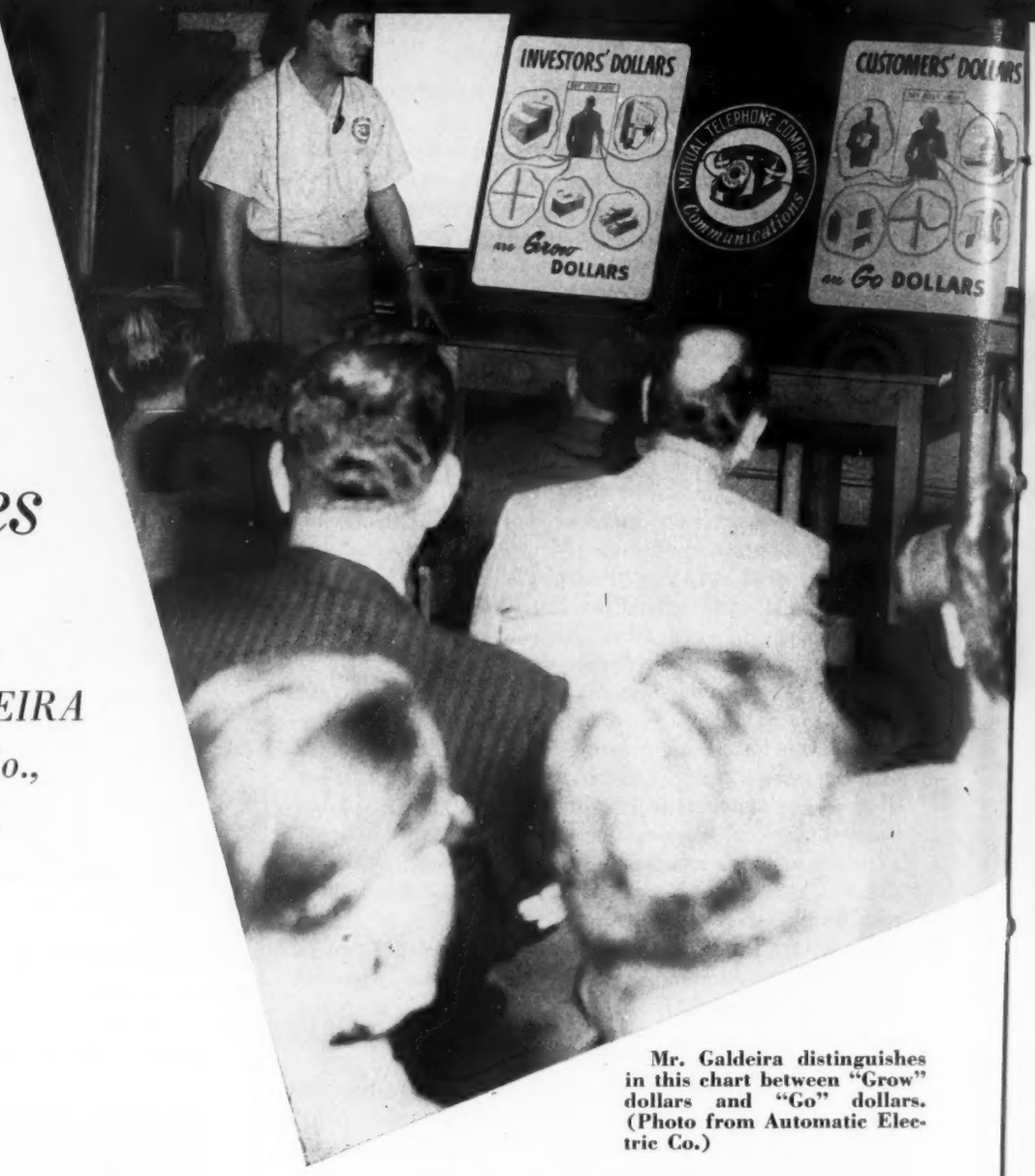
MORE FAMILIES HAVE MORE INCOME . . .



*Measured in dollars that have the same buying power as 1950 dollars.

Bringing Facts To Employees

By EARLE GALDEIRA
Mutual Telephone Co.,
Territory of Hawaii



Mr. Galdeira distinguishes in this chart between "Grow" dollars and "Go" dollars. (Photo from Automatic Electric Co.)

EDITOR'S NOTE: — *Mr. Galdeira is a staff assistant in the plant department of Mutual Tel. Co.*

WHEN I joined Mutual Telephone Company in the latter part of 1945 as a cable splicer's helper, one of the first things that I received from the company, through the mail, was a special issue of "*Party Line*", our employee publication. This issue contained the company's 1944 annual report for employees.

This was the first time that I, like many others, had ever received an annual report. It was written in simple language with drawings and charts as illustrations. Even so, as I turned the pages of the publication I found I couldn't understand many of the drawings or charts, and the words had little meaning to me. Many questions began to run through my mind about the report. Questions that I didn't know whom to ask for an answer. On the whole, I felt that the report held little meaning for me since I was only a cable splicer's helper and it couldn't affect my work at the company.

I recall hearing comments from other fellow-employees about the publication. Comments such as—"Why does the company spend money for this and that?" "Why doesn't the company do this or that?" Questions that had some merit but that I, too, could not find answers to. After hearing several debates among employees I came to the conclusion that I wasn't the only one in the dark about the report.

I received similar reports in the mail in 1946 and 1947. Though I felt that it didn't matter one way or the other if I read these reports, I began to study them a little more closely. I found that the later reports were better illustrated. However, many of the statements still held no meaning for me since I was not familiar with reports of this type. The facts and figures were hardly enlightening. The interest the publications were supposed to create never materialized, as far as I was concerned. Many other employees probably had the same thoughts;—the publications were of little value to them as far as understanding the contents.

Year by year I would throw the special publications aside after trying vainly to understand the annual report which the company was trying to put across in as simple a manner as it knew how.

In 1948 the special report was discontinued. It was no longer included in "Party Line". The company felt by issuing a separate report for employees the implication was that management was talking down to the workers. This was not true, yet it seemed a good idea to give them the same report that was sent to all stockholders. Needless to say, the stockholders report was just as confusing to many of us, and although we were asked through individual letters to ask questions of our supervisors on sub-

WHATEVER YOUR SIZE OR NEED . . .

POWERS EQUIPMENT

Serves Better! Lasts Longer!

SERIES 350
LIGHT DUTY MAINTENANCE AND GENERAL SERVICE BODY

This versatile body, available for installation on 3/4 and 1 ton chassis, is equipped with an under-floor winch and a fold-over derrick for handling poles up to 35 ft. in length. Standard equipment includes a 24 ft., two-section ladder which can be used from rear of body. Compartments are weathertight and are furnished with shelving, parts bins, and material hooks to provide orderly storage of a wide variety of service work needs.

"UNI-LIFT" TELESCOPIC SINGLE LEG DERRICK

The "Uni-Lift" is designed for use with multiple pulley blocks and can handle poles up to 35 feet in length. It can be installed on most light duty service vehicles. Derrick boom may be used in two lengths at two angles of elevation and is stowed along body side panel when not in use.

UTILITY COMPARTMENT SECTIONS

Available in 74", 84", and 104" lengths for converting pick-up or express-type bodies into general service units. A parts bin, 48" in length, is furnished with removable dividers as standard equipment in each section. Compartment doors have built-in cylinder locks, keyed alike. Overhead rack is optional.

Pay-out & Take-up WIRE REELS

MODEL PR — Strong, lightweight reel which can be used in a horizontal or vertical position on or away from the truck. Holds 15" coil.

MODEL 3893 — Heavy duty reel which holds a 21" coil. Can be used for pay-out and take-up in a horizontal or vertical position.

MODEL CR — Operates from end of extended winch shaft. Holds 20" coil, is easily collapsed for mounting or removing wire.

POWERS-AMERICAN . . . Your one source for public utility bodies and equipment

- LINE CONSTRUCTION BODIES
- GENERAL SERVICE BODIES
- CABLE SPLICERS BODIES
- POLE TRAILERS
- AERIAL LADDERS
- HYDRAULIC TOWERS
- WINCHES & CAPSTANS
- POLE DERRICKS
- POWER TAKE-OFFS
- WATER CASKS
- PINTLE HOOKS
- UNIVERSAL SHEAVE BLOCKS

• and many other items of utility automotive equipment.

TEAR OUT AND MAIL THIS COUPON TODAY FOR COMPLETE INFORMATION

POWERS American DIVISION

McCABE POWERS AUTO BODY COMPANY

HOME OFFICE: 5900 North Broadway, St. Louis 15, Mo.
WESTERN OFFICE: Latham Square Bldg., Oakland 12, Cal.

McCABE-POWERS AUTO BODY COMPANY, 5903 N. Broadway, St. Louis 15, Mo.
Without obligation, please send me details on the following:

☐ SERIES 350 BODY ☐ PR REEL ☐ _____
☐ "UNI-LIFT" ☐ 3893 REEL ☐ _____
☐ COMPARTMENT SECTIONS ☐ CR REEL ☐ _____

Name _____
Company _____
Address _____
City _____ Zone ____ State _____

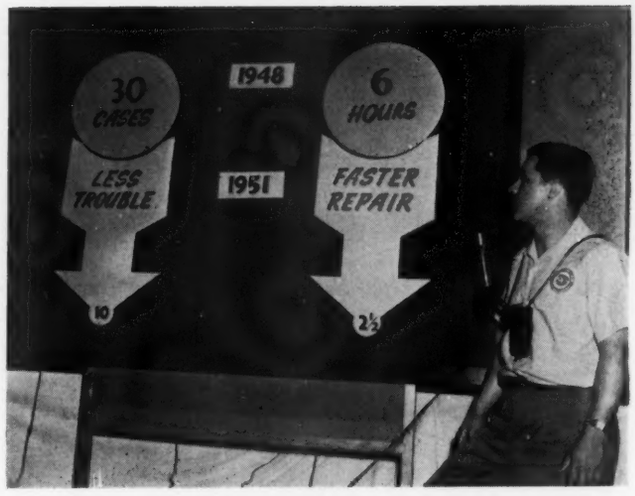
jects which were not clear, I felt none the wiser. The plan was to coach supervisors on probable questions and answers. For some employees this manner of presenting the facts that mean so much to all of us was excellent. But to the majority, it was still not the complete answer.

Use of Visual Charts

IN 1949 THE Industrial Relations and Advertising Departments devised a new system of presentation. Visual charts were made. They were fastened with rings so that each chart could be turned back like the pages in a tablet. Three sets of charts, each having 32 pages, were used. With the aid of these charts, a selected group of supervisors held meetings with groups of employees. These meetings, of one hour duration, were very effective since the presentations were both oral and visual, making the facts far more interesting. Since most of us are children at heart, the visual charts really captivated our interest. We all sat alert, anxious to see what graphs and pictures were on the following pages. The charts were mounted on an easel-like stand. Subsequently, a wooden case was constructed which, when opened, became an easel. This compact unit was used to transport the charts to other islands so that all employees could be addressed. This manner of presentation was by far superior to any of the reading matter used in the past.

However, there was yet one objection: Since supervisors, members of management, made the presentations, many employees felt that the material was just a form of propaganda from management, and that they had no choice but to believe what was told them, since management was doing the telling. This attitude was only natural.

In 1950 the report was given in a simpler but not so satisfactory manner. Supervisors were provided texts containing all the facts and figures of our company's 1949 operations. The texts were read to groups of about 40 employees. We were invited to ask any questions which might occur during the meeting. I had several questions but the report read by the supervisor was so boring that I did not want to prolong our sitting. Others felt that the supervisor knew only what he read and, therefore, could not answer our questions. As the presentation was verbal, I could not remember what areas I wanted to ask questions about at the end of the session. We not only wanted to know how much money the company made, but exactly where this money went. How much was spent for expansion of the company? What portion went towards management's payroll? Would a balance of funds mean a raise for the working man? Why did the profits always go to the stockholders? We wanted a raise!! Was it not through our hard work that these profits were made? These are only a few of the many questions asked by employees. We were later to have them answered, but it was not until 1951 that our annual report became a really understandable message.



Earl Galdeira of the Mutual Telephone Co. of Hawaii, explains company's improvements in handling trouble cases, using a flannel board for illustration to Independents attending California convention.

President J. Ballard Atherton of the Mutual Telephone Co., Hawaii, and Anna and Earl Galdeira just before Earl's speech at the recent California convention.

Visual Aid Method

IN 1951 MUTUAL TELEPHONE Company adopted a visual aid method developed by The Du Pont Corporation. Five rank and file employees were chosen to present the report. Their selection by management was based on their leadership qualities, work record, and how well they were liked by their fellow-employees. I felt quite honored to have been one of the five selected.

The leaders were relieved of their work duties and reported for two weeks' training by the training supervisor of the company. The training consisted of information on the Du Pont method of presentation and the company's operations, financial results, problems of management, and progress for the fiscal year. Each leader studied the regular stockholders annual report published by the company and any questions on its contents were answered by management. Each leader then used his own words to present the information, to group meetings with his fellow-employees.

It was not until I took this training that I realized that the company was making every effort to really inform its employees of its operations. I had the feeling that the company wanted to let its employees know what transpired during the previous year and there was nothing to hide.

During the training period I found out what capital investment really meant. Meanings of stocks, bonds, sur-

plus fund, free enterprise, etc. finally became clear because prior to this, I had heard of these topics but did not fully understand them. I, as well as the other leaders, felt that since I had had the opportunity to find out about these subjects, it was part of my duty and obligation to pass on this knowledge to the rest of the employees.

Prior to this, I, as well as many other employees, felt that the profits earned by the company should be given to the employees.

Report Condensed To Three-Hour Presentation

THE ORIGINAL form of The Du Pont report required 10 hours to present, whereas, at Mutual, the report was condensed to three hours. The first one and one-half hours of the presentation covered the American Business System and its operations, some of the accomplishments that we have been able to make with our American System, and how we have been able to make these accomplishments. The second hour and one-half of the presentation explained the financial results and operations of Mutual Telephone Company for the year. It was pointed out to our employees how our Company is part of the American Business System.

A blackboard covered with a fuzzy felt material called "flock-tite" was used throughout the presentation. Card displays illustrating the topic of discussion and also backed with the flock-tite material were put on the flock-tite board and they became adherent. Each card was a part of a picture and they were placed in position as the leaders talked. This had the double advantage of not interferring with the flow of our delivery and we didn't have to turn our backs to the group in attendance. It held the attention of the group because they saw the full illustration grow as we talked. At the end of each chart, questions could be asked while all the units were in position on the flock-tite board. The removal of each chart from the board was very simple and usually took less than one minute. Each chart to be presented was previously arranged in order ready to be slapped on the board.

Employees Given Some Basic Economic Facts

IN OUR FIRST hour and a half meeting the employees were given some basic economics. The first chart covered the financial operations of a corporation, the problems of executive management, the need for adequate dividends, and the function of competition—the driving force which continually gives the customer more value for his dollar.

A second chart demonstrated how well free enterprise has provided for the American people. The chart showed what had been accomplished with our free enterprise system in enabling us to have the highest standard of living in the world. This chart breaks down many of the factors which have boosted our national productivity to such heights. A third set of charts, or slap-up cards, explained the special advantages of individual freedoms which have pushed our production far beyond that of other countries that also have a free enterprise system. A comparison was made at this point of the individual freedoms Americans have as compared with the freedoms, or lack of them, people have in other countries.

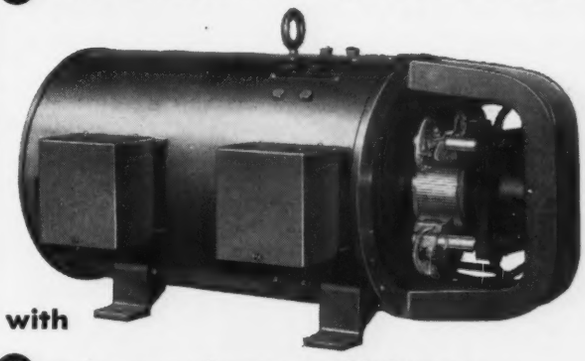
With this background, our employees were able to

(*Please turn to page* 82)

FOR *Time-Proved* BATTERY-CHARGING PERFORMANCE

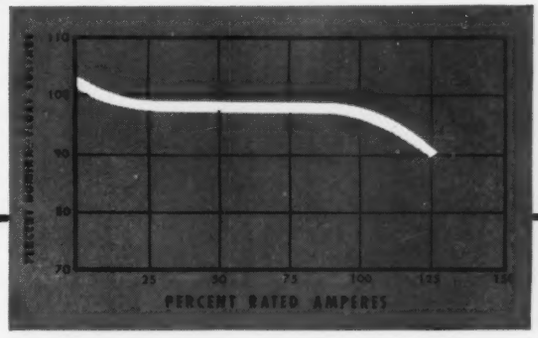
Specify

1 E. P. Diverter-Pole Motor-Generators



with

2 Inherent Constant Voltage . . .



Constant voltage delivered by E. P. Diverter-Pole Motor-Generators serves three important functions:

A—DECREASES RELAY MAINTENANCE. Keeping the voltage from rising too high helps to prevent "slapping" of the contacts that may result in misalignment, pitting and burning, and preserves the sensitive adjustment of the relays. High-coil current . . . with accompanying insulation breakdown, shorting and burning-out . . . is avoided.

B—INCREASES BATTERY LIFE. Operating records of many exchanges show that the E.P. Diverter-Pole Battery Charger increases battery life from six to fourteen years. High battery temperature, excessive gassing, and undue breaking down of the active cell material are prevented to assure the longest possible battery life.

C—IMPROVES VOICE TRANSMISSION. To assure satisfactory voice transmission, the Battery Charger must maintain the output voltage of the battery as close as possible to a constant value. Transmitters may become noisy if they are subjected to an excessively high voltage, and may have to be replaced because of permanent damage.

Write for Bulletin 209

EP

THE ELECTRIC PRODUCTS CO.

1729 CLARKSTONE RD., CLEVELAND 12, OHIO, U. S. A.

How "GOOD" will it last

LEICH

Unless you hit it with a hammer, a Leich telephone will last as long as anybody's. However, if you're in business to make money, how "good" it will last is more important.

We try to make Leich telephones so you will have fewer service calls than with any other kind. We've re-engineered them many times, re-designed and improved parts that have shown they might cause trouble.

Our Leich folks put them together carefully . . . and with pride. They believe they're building the finest telephones in the world. We believe you'll think so too when you try them. And you discover that lasting "good" is more profitable than lasting long. Leich Sales Corporation, 427 W. Randolph, Chicago 6, Illinois.

MANUFACTURERS OF TELEPHONES, SWITCHBOARDS AND RELATED APPARATUS SINCE 1907

The Homespun Te

"Take a dash of wit, scramble it with three or four hearty chuckles, polish with some down-to-earth philosophy and you'll have a recipe which pays off in good subscriber relations . . ."

A DASH OF WIT, scrambled with three to four hearty chuckles and polished off with a down-to-earth philosophy—that's the recipe which is paying off dividends at Dunnell, Minn., for good telephone subscriber relations.

Witness these samples:—"PLEASE KIDS—LAY OFF THOSE INSULATORS . . . Would you like it if I came over and cut the spokes out of your bike wheel??? Let's Play Fair!"; or,—"BE A GOOD PARTY LINER—Wait until you are sure your neighbor got the ring through before rubbering—Then Muzzle The Kids!"

Author of these and other pithy quotations, which have become the stock-in-trade of the Dunnell Telephone Company's annual directory, is a mild-mannered, mustachioed man whose name is Carl L. Rupe.

Rupe and his wife run the telephone company in this farming community of 239 people, and have a lot of fun doing it. Apparently their subscribers like it too, because the Dunnell Telephone Company has had its rental charges raised three times since World War II by the State Railroad and Warehouse Commission, and there's been nary a complaint yet.

Actually, though, those weren't the primary reasons Carl writes the yellow-page directory boxes which have created so much interest. To put it plainly, he just likes to do it.

Those directories of his are now in the "collector's item" category. For instance, there are only two copies left of his special 1948 directory, which had, in addition to the humor, a special tear-off margin on each page. Since 1948 was the year Dunnell cut over to automatic dial, the margin made it possible to print both the old and new numbers without benefit of an extra directory. After conversion, the margin (with the old numbers) was torn off.

And there are only a handful of copies left of his 1952 directory. Carl intentionally overprinted by 100 copies,

Telephone Philosopher . . .

By JOHN WITHY

but word had gotten around and request after request came in. A minister came in for an extra copy, saying it was the first telephone directory he ever enjoyed reading; the county highway engineer at nearby Gaylord has a standing order; a business house at Cleveland Ohio, takes five; half a dozen telephone companies take 50 between them.

"I've finally had to turn down new orders," Carl says ruefully.

Supporters of the Rupe style of wit aren't all in accord, however. They argue over which part of the book strikes them as the funniest.

Some, for instance, get their biggest chuckle out of the special one-page insertion sheet in the 1952 directory, listing new subscribers. Here's the way some of those read:

Egner, Floyd E., Jr. farm 2420
On Dr. Clark's damp ½ section

Janssen, Marvin 2117
Where his Dad used to live

Gettler, Roy 2297
Down on the Iowa line on the old Grill farm

Schmidtke, Ervin 2100
Down on the 80. Elly's son-in-law

The listings also carry the names and telephone numbers of two new pastors in the community. Underneath is the terse suggestion: "GO HEAR THEM. DO YOU GOOD."

Other enthusiasts, however, laugh loudest at witty boxes like these in the classified advertising section:

(1) How Would You Feel—If I came out and set fire to your smokehouse??? . . . That's how I feel when you let a fire go and burn off my poles!

(2) If You Burn Off A Pole—Give Me a Ring I haven't shot anybody for it yet!

(3) Be A Good Party Liner—It cost so little, so use It lots, It listens so nice—The Phone.

(4) It Will Only Take a few minutes to lower that elevator when you go down the road. But it takes a long time to put the wire back up.—Give me A Ring And I'll Come Out And Take The Wire Down.

Occasionally, Carl gets a bit more solemn. The following is a good example:

SECURITY

In the dark silence of night, there is one light
forever burning—one voice that is never stilled.
That light is the light in your telephone exchange
THAT LIGHT IS YOUR TELEPHONE

When he's covered the telephone situation sufficiently, Carl often moves to another field. The new directory carries the following box:—"Those little guys sitting there by your table are entitled to good government. You can help them by thinking and voting in every election.

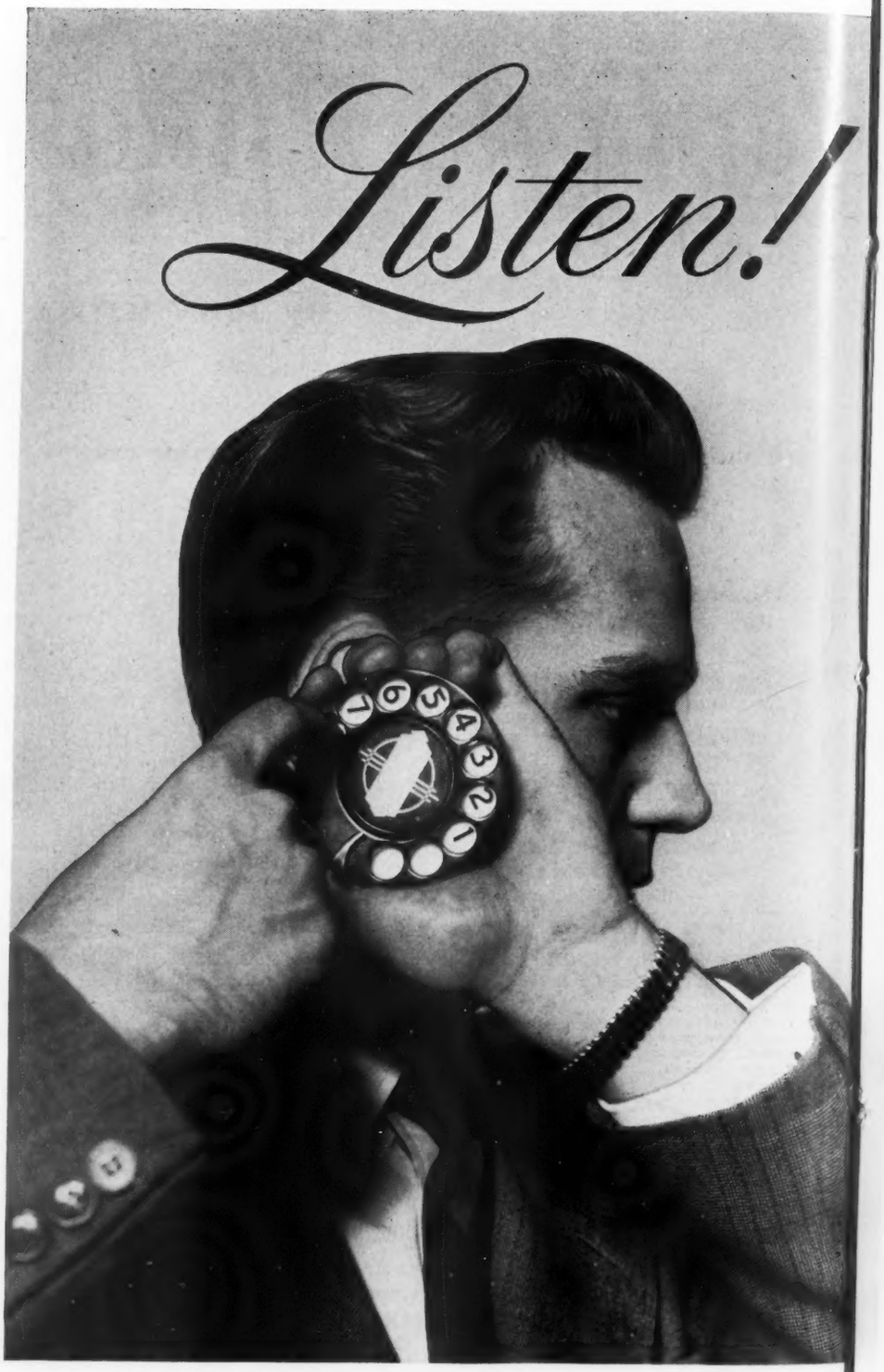
Carl carries the "homespun" touch over to the alphabetical listings. Nicknames are given where Carl knows them; farmers, merchants, bankers—all are identified by business. Hank Vollrath is the "windmill expert"; Frank Rosberg the "grader man"; John (Butch) Anderson is the carpenter. The Koeneckes are identified as twins—Dick and Joan. J. C. Bliesmer is "Old Chris"; Ernest Bliesmer is the corn sheller. G. F. Mathwig is "Young Buff".

"Why be formal about it?" Carl asks. "In a small town like this, everybody knows everybody else. They get a kick out of thumbing through the directory to see what that guy Rupe says about them this year."

Advertisers like it too, apparently. The 1952 directory has 61 advertisements in it from different firms and professional people—about a 99 percent saturation in Dunnell and a good smattering of businesses outside town.

"I have a waiting list of advertisers but there were no more listings to put in so the book couldn't run any bigger. We just didn't have the space to put them all in," he explains.

(Please turn to page 54)



WHY does Type 51 out-perform every other dial?
Get the "inside" story
—the facts and features—clearly illustrated.
Write for circular 1714.

. . . AND YOU'LL BUY

AUTOMATIC'S NEW TYPE 51
"The Silent Dial"

Type 51 is the *quietest dial in the world!*

Hold it close to your ear. Then listen!
. . . while you turn the fingerplate from "O" and release it.
You'll feel its fluid smoothness,
and you'll hear no more than the faintest whisper of sound.

What does this quietest-in-the-world,
smoothest-ever operation mean to *you?*
Just this: it means that Type 51's
the most durable, trouble-free, subscriber-satisfying dial
you can buy!
Its fine design, expert manufacture,
and many new features
—including a new pawl silencer, new gear contours,
and new mirror-finished working parts—
make it far superior to any other dial.

We've proved Type 51 through 3,500,000 operations
—several lifetimes of hard use—
and we invite you to test it for yourself.
Order a sample today.
Listen! . . . and you'll buy Type 51.

AUTOMATIC ELECTRIC

Originators and Developers of the Strowger Step-by-Step "Director" for Register-Sender-Translator Operation . . . Machine Switching Automatic Dial Systems
Makers of Telephone, Signaling and Communication Apparatus . . . Electrical Engineers, Designers and Consultants

Distributors in U. S. and Possessions: Automatic Electric Sales Corporation
Export Distributors: International Automatic Electric Corporation
1033 West Van Buren Street, Chicago 7, U. S. A.

Carl writes the boxes in his spare time, of which there isn't a great deal. That's because, in addition to running the telephone company, Carl is also village mayor.

The Rupes—dad, mother and daughter Fanny—came to Dunnell in 1946, after previously owning several other small companies and at one time working with Northwestern Bell Telephone.

"The Dunnell company was formerly a farmer's cooperative, and was very run down. But it was easy on the pocketbook, so I bought it," Carl recalls.

The dial conversion program, started in 1947 and completed in 1948, was one headache after another. Slow delivery of materials; financing problems; sleet storms, and Rupe's own inexperience with dial operation were all obstacles to be passed. But finally the switchover was completed, and the Dunnell Telephone Company now has 28 percent more telephones in operation than it did when the first call was made four years ago over a dial telephone. And despite the rate increases, referred to previously, Carl hasn't lost a telephone subscriber yet.

He gives a big assist to Mrs. Rupe, who, he says, "had to be a patient woman all this time", and to daughter Fanny, who now is working in the service department of Northwestern Bell in Minneapolis.

"When she was first born, we gave Fanny a teething ring," Carl said. "But she would have none of it. She preferred to chew on a telephone operator's mouthpiece that belonged to her grandmother who, incidentally, was also in the telephone business."

As Fanny grew older, Carl made a pair of pole-climbing spikes for her and she learned the trade of telephony. They teamed up as a father-and-daughter team, and Fanny did a variety of jobs that normally would not be considered as "woman work".

Getting back to those directory boxes again, Carl reports that he started writing them back in the depths of the depression, when he was running the Kelliher Telephone Company in sparsely-settled northern Minnesota.

"One day I decided to forget being formal, and threw a couple of humorous boxes into the classified section. There was plenty of room, because ads were hard to sell in those days.

"Pretty soon they were stirring up comment, and people would stop me on the street to tell me how much they enjoyed reading the directory. So I kept on doing it, and then found that it became easier to sell ads. There was no reason to stop, and I've been writing them ever since."

He'll probably keep on writing them, because Carl Rupe has found that a bit of humor, plus that "homespun" philosophy, are good mixers for a small town telephone company to use.—THE END

QUOTE

"In 20 years . . . the Federal Debt has multiplied 13 times; Federal spending has multiplied 15 times; national income (the money we earn to pay these costs) has multiplied less than seven times." — *(Adams (N. Y.) Jefferson County Journal.)*

Safer THAN EVER • Better THAN EVER

SOLDERING PRODUCTS WALL The Safety Line SINCE 1864

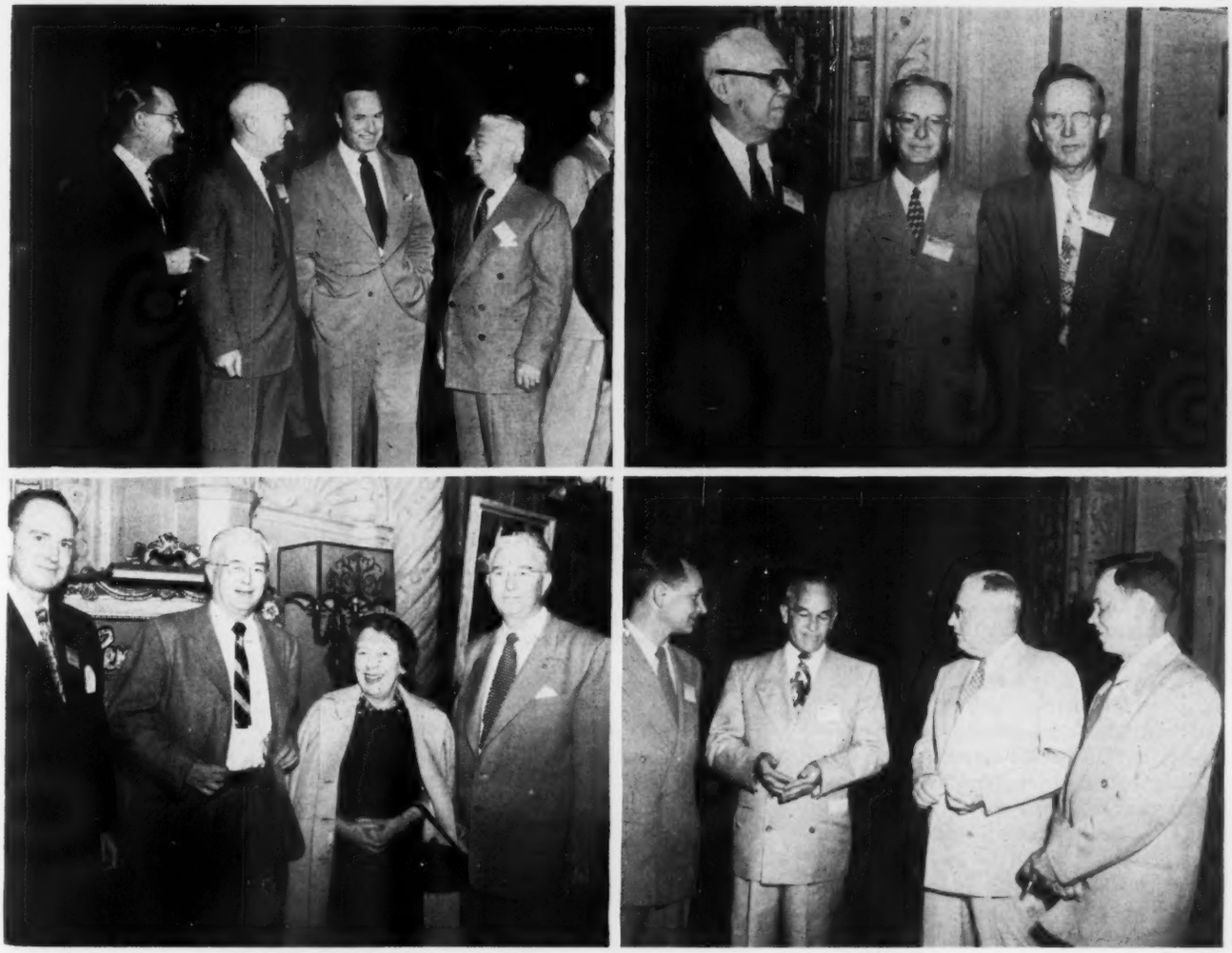
Pisto Grip BLOW TORCH

You get added safety and added performance in Wall Blow Torches with the revolutionary new Pisto-Grip handle. Drawn steel tank has brazed inserts and electrically seamed bottom. The Wall blow-proof pump means added safety. Available in brass or steel. No extra cost for this new handle. It will sell on sight! Write today for complete catalog.

COMPOUND KETTLES • FIREPOTS • OILERS • SAFETY SHIELDS • SOLDERING IRONS • SOLDERS • OIL CARRIERS • PAINT POTS • ACCESSORIES

WALL MANUFACTURING CO.
Grove City, Pa.

SOLDERING PRODUCTS WALL The Safety Line SINCE 1864



Members of the California Convention groups shown above are: (Top, l. to r.)—W. G. Chaffey, R. J. Hadden, W. W. Straley Harlan W. Holmwood, Aubrey Wardman, F. V. Rhodes, H. F. Knapp, and (Bottom, l. to r.)—Les Warner, Frank Davies, Mrs. C. F. Mason, O. B. Lloyd, Don Strahl, E. W. Watson, J. E. Bigelow, and Robert Silkwood. —*(Calif. Convention Photos by Jack H. Jensen of Associated Tel. Co., Ltd.)*

California Convention Report

By GRANT SMITH, Santa Monica, California

MORE THAN 900 telephone people attended the 33rd Annual Convention of the California Independent Telephone Association held June 19 and 20 at the Biltmore Hotel in Los Angeles.

C. F. Mason, chairman of the board of Associated Telephone Co., Ltd., was reelected to his 19th year as president of the Association. Featured industry speakers were Mr. Mason and Mark R. Sullivan, president of The Pacific Telephone & Telegraph Co.

In his keynote address, Mr. Mason told the assembled telephone representatives: "Remember this: To your small community the telephone service you furnish is just as vital and important as the service in the largest city. And if you were not there with your lines and your switchboard, the large city would not be able to reach your community. You are just as important a part of the telephone system of this state and this nation as the largest telephone company—in fact, you are a partner in the joint undertaking of providing a complete, integrated communications system."

Taxes—Federal, State and Local

TURNING to the problems of the industries. Mr. Mason said, "I wonder just how many of our customers realize that they are paying on the average about two dollars a month on their telephone bills for taxes—Federal, state and local."

"I wonder," he stated, "how many of them realize that their telephone company turned over to the government in taxes in 1951 over three times as much as they paid out in dividends on stock and fixed charges. I wonder if many of our customers realize that one-third of every dollar collected by the telephone companies all over the United States must be paid over to the government in taxes (including excises) before the telephone company gets the other two-thirds to cover its employee payroll and other operating expenses.

"It is an astonishing fact that out of all forms of major business activity in this country, in proportion to dollar revenues, there are only two which are more heavily taxed than the telephone industry. And these two are the traditionally highly taxed

luxury items of liquor and tobacco. Understand, I am not complaining about the necessity of taxes — although the fact that a necessity such as telephone service is taxed higher in some respects (toll) than the luxuries such as furs, jewelry, cosmetics, and night clubs, certainly invites consideration!

"I know that it is becoming tiresome and somewhat futile for businessmen to scream about high taxes at industry meetings such as this. But I do believe that the real answer, with respect to something being done about it, is to awaken the public—our telephone using public—to the stark realization that *they are the ones who are paying for it!*

"The old fallacy, which some of our free spending political friends try very industriously to spread around, to the effect that these are taxes paid by big companies who can well afford it, is all too prevalent among too many people who should know better. If there were only some way for us to drive home these salient facts, to publicize them repeatedly and effectively, and to keep hammering away at them! Then perhaps Mr. Average Citizen or Johnnie Q. Public would wake up to the fact that he, and nobody else is paying for all this! It is not just a tax load on a lot of telephone companies—it's a tax load on a lot of telephone *subscribers*, and that includes a preponderance of the population of this country. If such a general realization were more widespread, I am sure our public would pay more attention to where this money is going, who is getting it, and what for."

Mr. Mason spoke of the fourfold obligation of the industry: "to provide adequate communication service to the public; to provide rates of pay and working conditions for its employees commensurate with their skill and responsibilities; to insure its investors and owners a cost of living increase in interest and dividends. To itself the industry has the obligation to maintain a healthy financial condition so that these other responsibilities can be fulfilled."

Members of this California Convention group are (l. to r.): Roy Siemund, president, Leich Sales Corp.; Ruth Mast of Associated Telephone Co., Ltd.; and D. C. Gibson, vice president, Leich Sales Corp.

Members of this California Convention discussion panel are (l. to r.): John Scott and Owen G. Jarboe of Associated Telephone Co., Ltd.; M. H. Alexander of Kern Mutual Telephone Co.; Robert Mitchell of Los Gatos; Louis D. Yard of Associated; and D. A. Perigo of California Water & Telephone Co.

Inflation

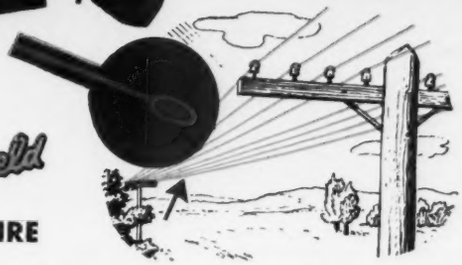
APPROACHING the problem of inflation from a new perspective, Mark R. Sullivan, president of The Pacific Telephone & Telegraph Co., said, "The problem of inflation, is not so much that the nation's economic line has moved. The great problem is that what was once a balanced line has become an unbalanced one. Parts of the present line have become badly swollen where it ought not to have been swollen. Other sections of the line are badly constricted, causing weaknesses in vital spots. The swollen parts must be reduced, the constricted parts loosened up, for only through a healthy, well balanced line may we expect the life blood of business to flow equitably and effectively for the benefit of all."

The telephone industry, Mr. Sullivan said, occupies one of the constricted places in the line, having today to make two telephones do the work of six as a result of the inflated cost of installing those two telephones. It is impossible, he pointed out, for us to treble our rates to take up the slack. With the tremendous expansion asked of the telephone industry in California, an expansion which saw a postwar installation of more telephones than have been installed in all of South America in the last 75 years, the telephone industry is hard put to make ends meet. As long as it is necessary to more than double the cost of installation without a commensurate rate increase, the telephone industry will

(*Please turn to page* 58)

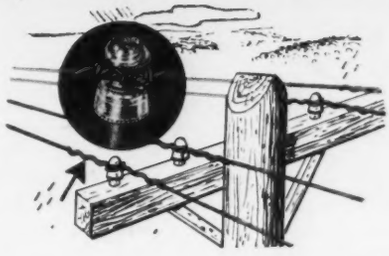
LISTEN IN ON THE Copperweld TELEPHONE LINE

A FULL LINE OF DEPENDABLE PRODUCTS



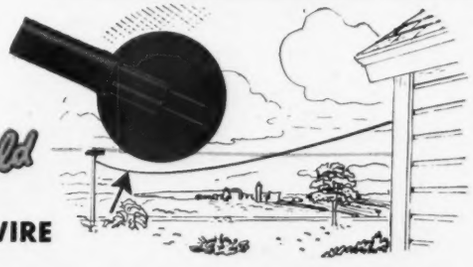
Copperweld LINE WIRE

Having the best conductance of any high strength wire, Copperweld* provides excellent voice and high frequency transmission characteristics. It has greater strength than any wire of comparable electrical properties. Light in weight, non-rusting, easy to string, it's the ideal wire for long-life, long-span construction.



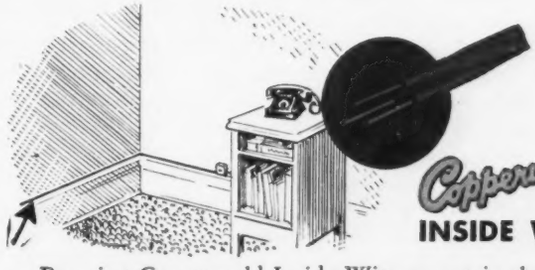
Copperweld GRIP-FLEX[38] TIES

Here's a strong, non-rusting tie that's simple in design, easy and inexpensive to apply. The Grip-Flex[38] Tie assures uniformity of construction—holds the conductor secure to the insulator—and reinforces the conductor over the entire length of the tie. Made for line wire sizes from No. 12 Awg to No. 6 Awg.



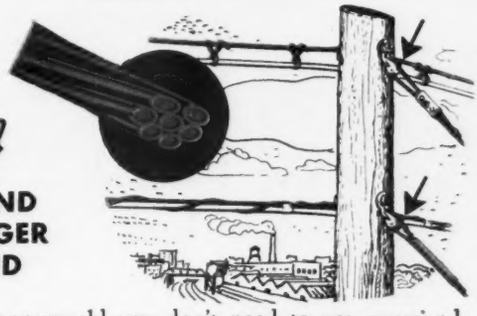
Copperweld DROP WIRE

The strongest drop wire made, Copperweld has the added stamina to withstand heavy ice and wind loads. No. 18 Copperweld Drop Wire has a breaking strength of 400 pounds for the pair, twisted or parallel. What's more, Copperweld provides high conductance and is non-rusting.



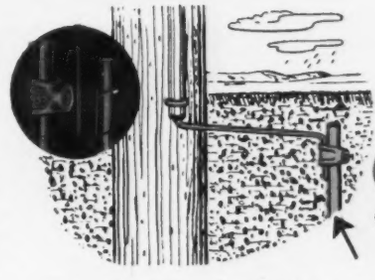
Copperweld INSIDE WIRE

By using Copperweld Inside Wire, you gain the advantages of lower cost, greater strength, ample conductivity and permanence. Non-rusting, pliable and easy to install, it's used by the world's leading telephone systems. Available in 2, 3 or 4-wire twisted or jacketed construction.



Copperweld GUY AND MESSENGER STRAND

With Copperweld you don't need to use oversized strand as a protection against later loss of strength caused by rust. Copperweld Strand can't rust—its original high strength is permanent. You save by buying smaller diameters—fewer pounds. Easy to handle, it can be bent, served, moused or clamped.



Copperweld GROUND RODS AND CLAMPS

The only ground rod with a copper covering inseparably Molten-Welded to a stiff steel core is stamped "Copperweld." It's non-rusting, strong, easy to drive. Get low-cost, permanent grounding protection with Copperweld Rods and Clamps. Copper-to-copper contacts throughout provide low resistance.

Trade Mark

For the Best in Telephone Products – use Copperweld SOLD BY LEADING DISTRIBUTORS

COPPERWELD STEEL COMPANY *Glassport, Pa.*

SALES OFFICES IN PRINCIPAL CITIES

June 19 and 20 were busy days for California Independents. Conventioners shown above are (l. to r.): Hal Davis, Los Gatos; Allen Anderson, General Telephone Directory Co.; Mrs. Davis; Conway Nielson, General Telephone Directory Co.; and Mrs. Jean D. Weir, O. E. Emley and Elizabeth Downey, all of Sunland-Tujunga Tel. Co.

continue to operate near the borderline of economic operation.

Pointing out that an increase in telephone rates could not contribute to inflation under the classic definition of too many dollars chasing too few dollars, Mr. Sullivan said that an increase in telephone prices would only remove dollars from circulation in one field and pass them into another. In no way would it affect the total supply of either goods or dollars.

Concluding, he said, "An industry that bears the shackles of an inadequate profit cannot do its best. In this country, with our dangers of today, our challenges of tomorrow, only the best telephone system is good enough. So, the need for a good telephone profit is not our need alone—a good telephone profit is a public need. And we ought to keep right on saying so—telling everybody in fact who will listen. And a surprising lot of people do listen—when we talk. I believe that we are heard, that we are believed—for what we speak is vital truth that creates belief simply because it is so. I propose that you and I keep on telling the telephone story. We have a proud record of acting in the public interest. We must also speak in the public interest."

Democratic Capitalism

EVEN WITH all of the skilled public speaking ability of the older speakers at the convention, one of the most significant and interesting talks was given by a young junior supervisor from Hawaii. Earl Galdeira, who last year was a lineman with his company, Mutual Telephone Co. of Hawaii, charmed the convention with the directness and the freshness of his approach as well as with the substance of his talk.

Beginning with a brief history of the inception of the yearly talks, a history which harked back to realization by company officials that rank and file employees were not being given sufficient information about the economic system in which they worked, Mr. Galdeira explained that the talks were adapted from material supplied by the DuPont foundation. As a preliminary feature of the indoctrination program, Mutual starts with an outline of the structure of the house of capitalism. Money, it was explained, comes from two sources: The sales of goods or services and the investment of savings by individuals. The latter is necessary before the former can even begin.

From the framework of business and capitalism in general, Galdeira proceeded to an explanation of the structure of a typical telephone company, showing to what purpose the moneys which that company acquired were put. In connection with his own company, he showed the employee benefits which the company provided its workers and followed that display with another showing how the company had operated from a financial standpoint in the previous year. Of some interest to stateside telephone people was the fact that with a company which operates in an area of declining population (a temporary feature), and with an ambitious expansion program in the past year, Hawaii Mutual still produced a net profit of about 8%.

C. F. Mason, president of California Independent Telephone Association, addressed the California convention.

Committee Reports

REPORTING as chairman of both the Pacific Coast Settlements Committee and the Rural Service Committee, Willard G. Wade, Vice President and General Manager of the Interstate Telegraph Company, reported that 1952 had seen the development of a new problem to beset the small telephone company.

With the advent of the new toll terminal charge granted Associated by the California Public Utilities Commission, new problems in accounting and inter-company relationships were posed, Mr. Wade reported.

Working with the committee, members of Associated developed a program of effort by the independent companies which will allow those companies which do not operate toll centers to dispense with the complicated bookkeeping necessary for proper records under the provisions of the Associated grant from the commission. Instead, Associated will furnish those smaller companies with a statement at the end of each month, so that they will not need to keep their own records. A fee of one cent

(*Please turn to page* 73)

PEATROPHONES

RECORD BLANKS
RECORD BLANKS
TALKOUT MESSAGE MAGAZINE
WHEN RECORDING TALKOUT MESSAGE SPEAK LOUD ENOUGH TO KEEP LAMP FLASHING
IMPORTANT
END ALL TALKOUT MESSAGES WITH THE FOLLOWING
"IF YOU WISH TO LEAVE A MESSAGE THIS MACHINE WILL RECORD IT. START SPEAKING WHEN YOU HEAR THE FIRST TONE SIGNAL AND YOU MAY CONTINUE TO SPEAK FOR THREE SECOND AFTER YOU HEAR THE SECOND TONE SIGNAL"
PRESS "OFF" BUTTON INSTANTLY ON COMPLETION OF LAST WORD
AUTOMATIC
TALKOUT RECORD

now available to the Independent telephone companies.

A percentage of our production will be allocated to the Independent Telephone field; shipments starting early August. Orders filled in order received.

TELEPHONE ANSWERING AND RECORDING CORP.

342 MADISON AVE. NEW YORK 17, N. Y.

TELEPHONE • MUrray Hill 2-5166

By **JOHN S. REED**

MODERN Central Office MAINTENANCE Practices

Section X-F of Mr. Reed's article continues a discussion of various types of ringing equipment, including rotary pole changers, vibrating pole changers, alternating current converters, tuned reed converters and static converters.

TONE COMMUTATORS, or tone wheels as they are sometimes called, are composed of alternate segments of metal and insulating material mounted on the shaft of the same motor that operates the cam type interrupter equipment. When two or more frequencies are specified, two or more commutators with the requisite number of segments for the tone frequency are mounted on the same shaft with a separate brush for each commutator. This arrangement is illustrated in *Figure* 172 which shows three commutators assembled to produce frequencies of 131.25, 206.25, and 393.75 I.P.S.

Tone alternators of the type illustrated in *Figure* 173 provide unvarying dial and busy tones. The tones are produced by an Alnico permanent magnet type generator without the use of brushes or commutators. This generator is attached to and forms part of the driving a-c or d-c motor. The alternator illustrated has three outputs: 500 cycles at 8 volts, 600/120 cycles at 10 volts, and 600/120 cycles at 10 volts (series connection), or 5 volts (parallel connection). It does not require an insulating transformer as the permanent magnet generator is short-circuit proof.

Ringing and Tone Interrupters

INTERRUPTERS are employed in conjunction with ringing machines and tone generators to provide various kinds of timed pulses such as flash recall at 90 impulses per second, busy-back flasher at 60 I.P.M., and all trunks busy flasher at 120 I.P.M., for example. In exchanges where code ringing is used, the interrupter is also arranged to produce code pulses of ringing current such as one long ring, two short rings, one long and one short ring, one long and two short rings, etc.

In automatic exchanges, the ringing interrupter may be arranged to break up the exchange ringing current into pulses of ringing and silent intervals. The purpose is to distribute the ringing machine output to different ringing groups and thus increase the capacity of the machine. The usual arrangement is to provide five ringing groups in the central office. The interrupter is arranged to feed a ringing pulse of one second duration to each group in turn. This results in a cycle of one second ringing with a four-second silent interval between each ring. In *Figure* 174 *is* illustrated a slow-acting solenoid type interrupter designed to produce the ringing cycle just described. Relay assemblies are now used for this purpose.

Interrupters may be of the vibrating, relay, or motor-driven cam type. Vibrating type interrupters are constructed like ringing machine pole changers and operate in a similar manner. In Figure 174 is shown a vibrating type interrupter. Relay type interrupters are assemblies of relays with time-relay characteristics and with the circuits through their contacts and windings arranged to produce timed pulses of the desired intervals.

Motor-driven cam interrupters have a slow speed shaft connected to the motor shaft through a worm drive. Cams of the proper contour are accurately set on the slow speed shaft to properly operate spring assemblies. In the newer models, the cams are made of nylon to assure long life. These cams are accurately machined to produce exact timing intervals.

Maintenance of Ringing And Tone Generator Equipment

MAINTENANCE routines on motor driven ringing machines and tone generators are very simple and generally consist of lubrication schedules, when lubrication is specified by the manufacturer, together with routine inspection and cleaning.

In automatic offices the general routine consists of cleaning the machines to remove dust and surplus oil at regular intervals. The main machine is tested for proper operation of busy tone, dial tone, and ringback tone by calling from the office telephone. The bearings are checked for proper lubrication.

If there is a question as to the proper frequency and voltage of the

(*Please turn to page* 62)

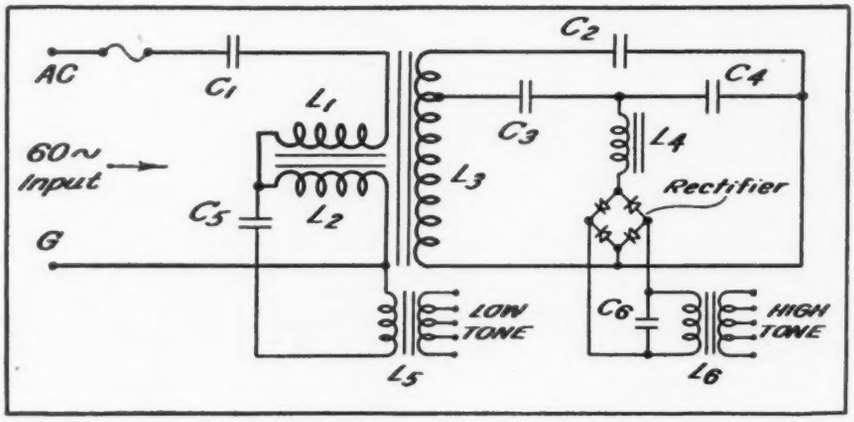
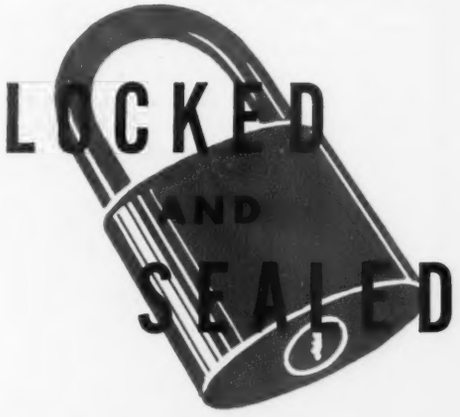


Fig. 170—Circuit of Lorain model A tone generator.

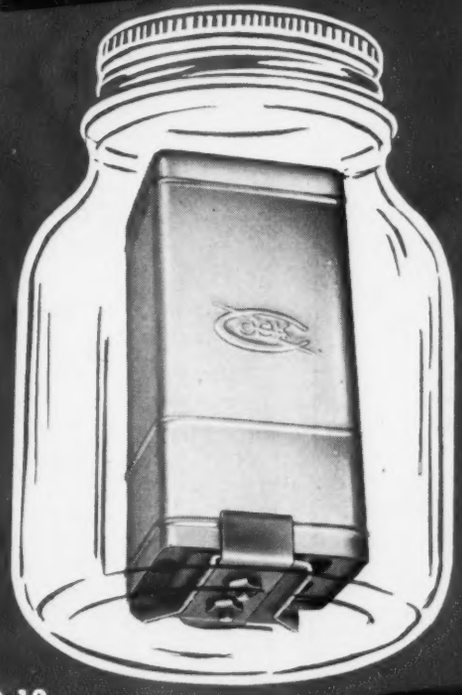
ALL COOK TYPE O SUB-STATION PROTECTORS

ARE NOW



TYPE O-7
O-9

With No Increase In Price



TYPE O-12

SEALED AGAINST

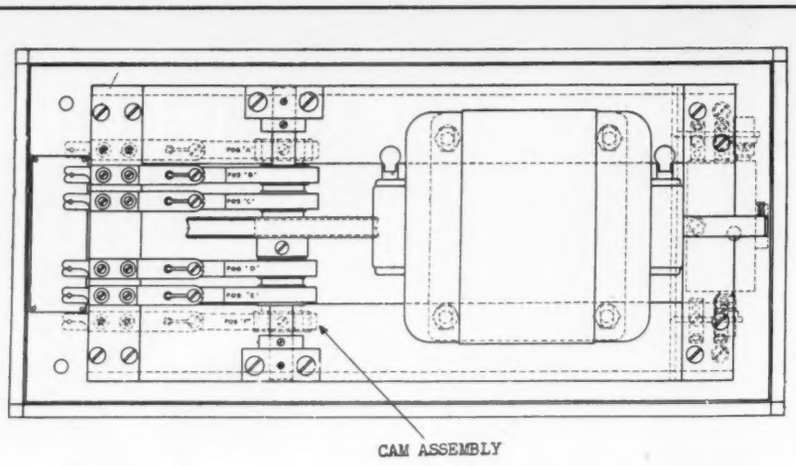
Moisture, Insects,
Fungus, Dust,
Salt Spray

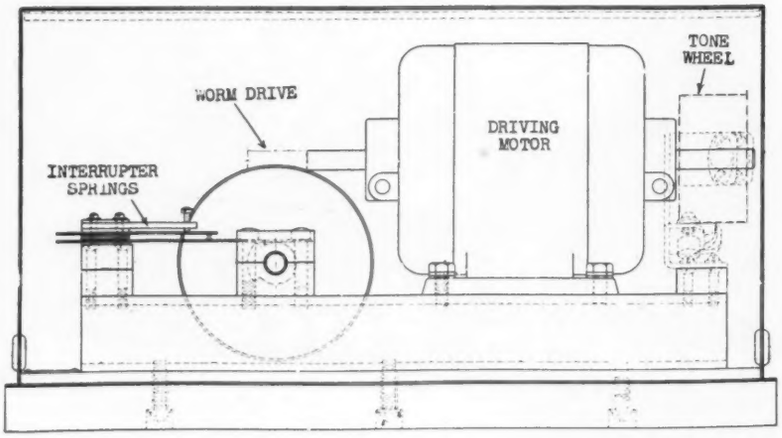
LOCKED AGAINST

Tampering, Wind,
Vibration, Curiosity
(Wire or Lead Optional)

COOK ELECTRIC Company
Since 1897

2700 SOUTHPORT AVENUE CHICAGO 14, ILLINOIS





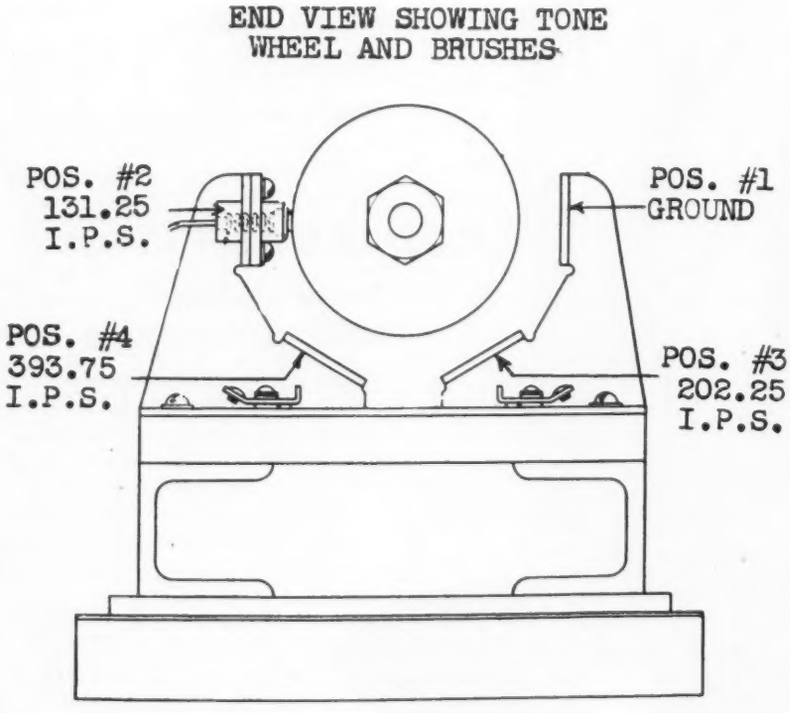


Fig. 172—Kellogg No. 10 ringing interrupter with tone wheel.

output, the speed of the machine should be checked against the name plate rating. If the machine speed is correct, the output should be tested with an a-c voltmeter and a frequency indicator.

Commutators should be cleaned and the brushes checked for foreign matter and hard spots. Good brushes should be cleaned and returned to their proper positions in the brush holders. Bad brushes will require replacement.

The auxiliary machine should be cleaned and repaired in the same manner as specified for the main machine. (It will be necessary to operate the other machine while working on one.) If automatic switching is provided, the main machine should be stopped to see if this action causes the auxiliary machine to come on the line automatically. During this operation, the associated alarms should operate in the proper manner.

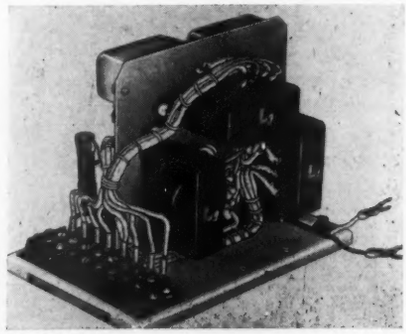


Fig. 171—Lorain model CK tone generator for producing 600 cycles modulated at 120 cycles for dial tone.

Details of adjustments provided by the manufacturer should be closely followed during the routine inspection and cleaning and when making needed repairs.

Maintenance of Single-Frequency Pole Changers

VIBRATING pole changers, particularly the older models, require careful and regular attention to assure their proper operation. The procedure described in this section applies to pole changers of the type illustrated in *Figure* 130 (FORTNIGHTLY TELEPHONE ENGINEER, June 1, 1952).

The voltage of the ringing battery and of the operating battery should be checked regularly to see that they do not drop below the minimum set for them. If the ringing battery is made up of dry cells, (in magneto exchanges) individual cells should be tested with a battery tester and defective cells replaced. It is important that the voltage be maintained at or near their normal values. A weak

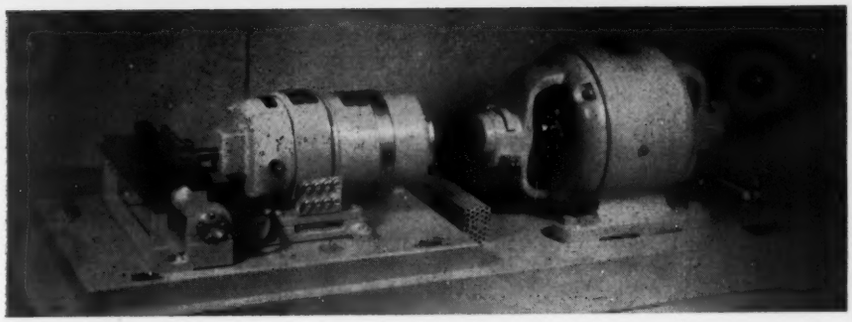


Fig. 173—Holtzer-Cabot tone alternator interrupter unit (single tier type) with ringing dynamotor. View shows interrupter and alternator unit with cover removed.

operating battery may cause erratic operation of the motor magnet interrupter circuit or result in faiure of the machine. If the ringing battery voltage is too low, the output will be correspondingly affected, and exchange ringing may become unsatisfactory, especially on long lines.

The contact points of the motor magnet interrupting springs, the ringing springs, and the contact pins of the vibrating arm should be kept clean and smooth. Dirty and pitted contacts cause erratic operation of the pole changer and result in poor quality of the ringing output.

The vibrating arm should oscillate at the proper rate to produce the proper ringing frequency. This frequency may be checked by means of a frequency indicator of the Frahm type. If an indicator is not available,

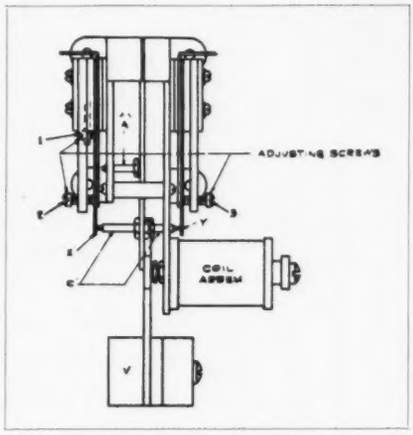


Fig. 175—Kellogg pole changer unit, showing adjustment points. ("A" = vibrating contact; "X, Y, & C" = transformer contacts; "V" = armature.)

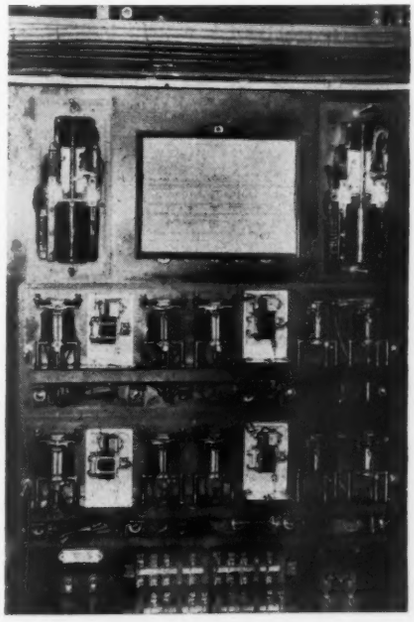


Fig. 174—Ringing interrupters in an automatic office. The two solenoid switches at the top of the picture are ringing distributors. Below are main and auxiliary sets of vibrators and tone buzzers. The two vibrators on the left in the main and auxiliary sets are a busy tone generator and a busy tone interrupter, respectively.

a good way to test the frequency is to utilize a hand generator connected to a test bell and turned at a moderate rate of speed, for comparison of the frequency output.

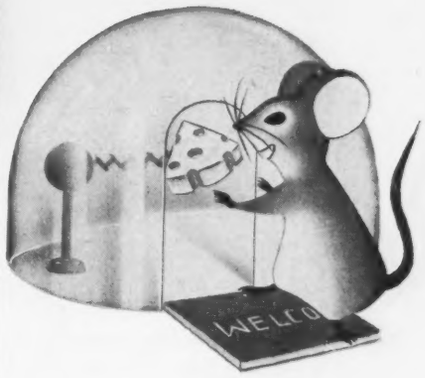
The motor magnet interrupter springs should be adjusted to cause the vibrator arm to swing in a sufficiently wide arc to result in a slight "follow" of the ringing springs on each side. In making this adjustment, care should be taken not to allow the armature of the motor magnet to strike the pole piece; otherwise noisy operation of the pole changer will result.

When the vibrator arm is allowed to hang in the center of its swing, the space between the ringing springs and the pin contacts on the right side should equal the space between the springs and the pin contact on the left side. With the vibrator arm in motion, the follow of the ringing springs should be plainly evident and should be equal on each side.

The correct operation of the pole changer is easily checked by means of a d-c voltmeter of 0-150 volts range. The meter is connected across the output of the machine. (If an

(Please turn to page 66)

We've Built a Better Mousetrap



FLOTROL

THE BATTERY CHARGER WITH NO MOVING PARTS *

Model 1200B

And telephone men are beating a path to our door.

They've found that FLOTROL does what they always hoped their battery charger really would do; IT HOLDS CONSTANT FLOATING VOLTAGE on the battery.

They've found, too, what it can mean to have a charger which doesn't require attention, one they can depend on to do its job, year in and year out, without costly and annoying routine maintenance or adjustment.

For complete information, write for Bulletin 160, which describes the single-phase models, from 1/2 ampere to 24 amperes, and Bulletin 161 which covers three-phase models from 25 amperes to 200 amperes.

* *No good on mice.*

LORAIN PRODUCTS CORPORATION
1122 F STREET LORAIN, OHIO

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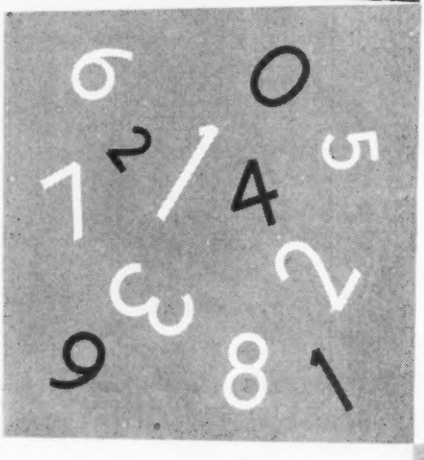
SUB-CYCLE



BETTER AND FASTER SERVICE... WHEN PEOPLE KNOW

All telephone users don't realize how much faster Long Distance messages go through when they make calls by number. So advertisements like the one across the page remind them how they save their own time—and speed service for everyone—when they know the number in advance.

The messages are reaching millions of readers of national magazines for August, helping telephone companies everywhere to do a better, faster job these busy times.

"Do you know the Number?"

Long Distance calls go through faster when you Call by Number

A HELPFUL HINT—Start today to build up a list of out-of-town telephone numbers. Write down those you already know. If there's a new number you don't have—or an old one you've forgotten—be sure to add it to the list when the operator gives it to you.

"You'll save time if you give me the out-of-town number you're calling.

"That way I can put your call through without first calling 'Information' in the distant city.

"Your own call goes through faster. And you help speed the service for everyone. That's especially important now, when so many urgent defense calls are on the Long Distance lines."

BELL TELEPHONE SYSTEM

Runzel... Precision made

TELEPHONE CORDS

Precise in every detail... leg length, trim, terminals, tracer color and stay fastener... Runzel cords make installation a routine matter. Installers like them because they simplify their work.

Subscribers prefer Runzel cords because of clarity of reception and the longer, trouble-free service they give.

There's a Runzel cord for every type and make of instrument.

Write for your copy of Runzel Telephone Cord Catalog.

Operators too, prefer Runzel Cords.

RUNZEL
Cord and Wire Co.
1723 W. MONTROSE AVE.
CHICAGO 41, ILL.

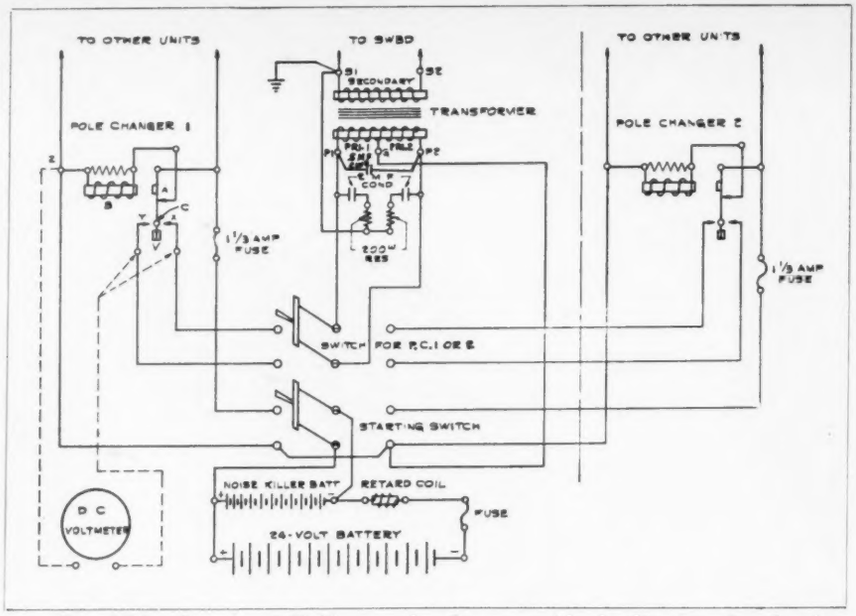


Fig. 176—Circuit of Kellogg pole changer with duplicate unit, showing test points.

output transformer is used, connection is made across the primary.) If the pole changer is operating smoothly, with its ringing springs correctly adjusted, the meter needle will vibrate steadily over a very small arc at the zero point on the scale. However, if the ringing springs are improperly adjusted so that the follow is unequal on each side of the vibrating arm, the meter needle will vibrate in a erratic manner up or down scale as the result of unequal amplitudes of the positive and negative pulsations of the output current.

The output voltage may be measured by means of an a-c voltmeter. The voltage measured directly across the output of the pole changer should be approximately 80 per cent of the ringing battery voltage. If there is an output transformer, measurement should be made across the primary. If the output voltage is too low, the length of the contact of the ringing springs and the pin contacts should be increased by readjusting the motor magnet interrupter springs and the armature spring tension to result in a greater swing of the vibrator arm. The output voltage at the ringing machine terminals should be between 75 and 90 volts, depending on exchange ringing requirements. The desired voltage is obtained by maintaining the ringing battery voltage at the proper value.

One difficulty with the operation of ringing machines is the tendency of the ringing contacts to spark. In spite of the use of a resistance-capacity combination bridged across the contacts of the pole changer, destructive sparking occurs whenever the ringing output is shorted in some manner, as when the operator rings into a short-circuited line.

Resistance lamps inserted in one side of the ringing leads from the pole changer, one in each position of the switchboard and one or more in the ringing machine itself, will protect the contacts. The resistance lamp operates in this manner: The cold resistance of the lamp filament is very low (20 ohms for a 75-watt tungsten lamp), but when the filament is heated to incandescence, its resistance increases 8 to 10 times the cold value. The ringing current is ordinarily too low to adequately heat the filament of the lamp, and little resistance is offered to its flow. However, the instant a short circuit occurs, the current rises sufficiently to heat the lamp filament with a consequent increase in its resistance. This automatically limits the current flow to a safe value, and contact sparking is prevented or at least greatly reduced. (*To Be Continued In The September Fortnightly Telephone Engineer.*)

QUOTE

"Our government experts say that many foreign countries could be made into self-supporting nations. Perhaps, like charity, these things should start at home. Even in this country nothing appears able to support itself without government help . . . here we are in far away foreign places telling them how to become self-sufficient." — *(Knoxville (Iowa) Express.)*

Members of this group of Oregon-Washington conventioners are (l. to r.): G. E. Krieger, Everett, Wash., president, Washington Independent Tel. Association; Jerome K. Kuykendall, Olympia, Wash., chairman, Washington Public Service Commission; W. R. Jarmon, Spokane, Wash., president, General Telephone Co. of the Northwest; Lowell Brown, Silverton, Ore., president, Oregon Independent Telephone Association; and Arthur Meehan, Mayor of Spokane, Wash.

Joint Convention Held *in Spokane*

By J. W. BAKER, Spokane, Wash.

ONE OF THE most successful joint conventions of the Oregon and Washington Associations was held at the Davenport Hotel, Spokane, Wash. June 23-24, with the host company being the General Telephone Co. of the Northwest, formerly the Interstate Telephone Co.

Several of the old familiar faces were absent this year and it was with sadness the group learned of the untimely passing of Clarence E. Johnston on Monday morning, June 23, since he had been very active in the Washington Association for many years. Mr. Johnston was an official of the General Telephone Co. of the Northwest. Wade Dean was unable to attend the convention as he had done for these many years, due to an unexpected business engagement at Hood River, Oregon.

At the opening session Monday morning Lowell Brown, president of the Oregon Association presided. After invocation by Rev. T. C. McQueen of the Westminster Congregational Church, Spokane, Wash., president W. R. Jarmon of the host company gave a warm welcome address to the visitors, as did Arthur Meehan, Mayor of the City of Spokane.

The first address of the session was given by Jerome K. Kuykendall, chairman of the Washington Public Service Commission, Olympia, Wash.

Explaining that good public relations cannot be maintained without adequate service or a reasonable expectation of it, Mr. Kuykendall commented—"Even then there will be complaints and misunderstandings which require eternal vigilance and courtesy if the loyalty and good will of the public is to be maintained."

"The Commission realizes," he said, "that many telephone companies have done and are doing all they can to improve their service and fill held orders, but that continued demand for expansion, plus scarcity of materials and qualified labor and the difficulty of obtaining necessary capital, preclude the possibility of speedy satisfaction of all customers and would-be customers. While these conditions exist, (and it appears that they will be with us for some time to come), good public relations are admittedly difficult to maintain; but are likewise all the more desirable.

"Your relation to the public in this regard is similar to the relation of the local government to the public. You are necessary and desirable and there is no substitute for you. The public, and the public alone, supports you. The public is entitled to know when and how you are going to perform the services it requires."

Mr. Kuykendahl made the following suggestions on policies to follow in dealing with the public:

(1) Let the public know what your problems are.

(2) Don't conceal facts.

(3) Be honest in all your statements and don't make any wild promises in hope that, somehow, you will be able to keep them.

(4) Train all employees who come in contact with the public so that they can accurately answer the questions most frequently asked and will inform you of questions asked which they can't answer. Then see that these questions are answered.

(5) Inform the public when you have started a project in which they are interested, and keep them informed of its progress.

(6) Demonstrate a sincere desire to render the type and quality of service the public demands.

(7) Use the various advertising media when the situation requires it.

"You should not forget," he said,

'52 P&H PENTA POLES

FULL LENGTH TREATED NORTHERN WHITE CEDAR

They are light in weight—easier to transport and set; they are clean and dry—easy to climb—safe for linemen. They are pleasing in color—neat in appearance.

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IN THE FIELD as in laboratory tests . . . *Crapo* Galvanized Steel Strand proves itself capable of withstanding severe punishment. Steel's inherent strength and durability are combined with definite economies in every size and grade of *Crapo* Steel Strand. You'll find the heavy, ductile, tightly-bonded zinc coatings, applied by the famous *Crapo* Galvanizing Process, provide lasting protection against corrosion.

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INDIANA
STEEL & WIRE COMPANY
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"that the public does not understand your business like you do and that it has many misapprehensions and misunderstandings concerning it. I will mention a few:

(1) "Many people think that a monopoly must, by virtue of its very nature, be profitable at all times, and that it never loses money, but at worst is merely not making as much as it would like to make.

(2) "Very few people have any conception of the expensive and complicated equipment that is required for a telephone exchange, other than the telephone instrument, wire and poles, which are readily visible.

(3) "Many people simply don't believe that there is a scarcity of any kind of telephone equipment or any legitimate reason for long delays between the time of ordering the equipment and its installation.

(4) "Very few people realize what a large part of operating expense is represented by labor costs, and what a serious impact a round of wage increases has on your profits.

(5) "Very few people know what a tremendous portion of your revenue must be paid to the Federal Government in income taxes.

(6) "Many people believe that the increased revenue derived from increased rates is, of itself, the source of funds needed to expand your telephone plant, and that your borrowings are repaid from your earnings."

Mr. Kuykendahl stated that he believes these are most frequently misunderstood, and suggested telephone companies use every opportunity to enlighten the public concerning them.

J. R. Gibbons, commercial personnel supervisor of The Pacific Tele-

Secretary-Treasurers of the Oregon and Washington Associations are (left to right): J. W. Baker, Spokane, Wash., secretary-treasurer, Washington Independent Telephone Association, and L. A. Gritten, Everett, Wash., secretary-treasurer, Oregon Independent Telephone Association.

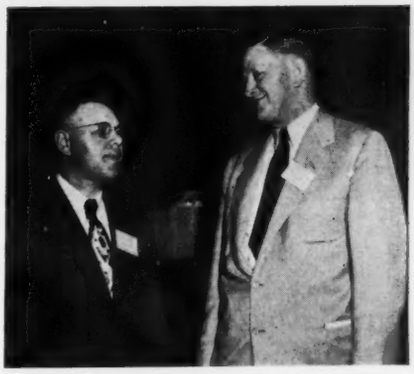
phone & Telegraph Co., Seattle, Wash. next addressed the audience on the subject, "Improving Customer Attitudes." Mr. Gibbon's talk was accompanied by charts on the Vue-Graph machine.

Lyle W. Salquist of the Chapman Chemical Co., Portland, Ore., concluded the morning session with a picture and talk on "Treat Wood Right."

At the afternoon session, G. E. Krieger, president of the Washington Association, presided. He introduced the first speaker, Howard F. VanZandt, assistant sales manager, Kellogg Switchboard & Supply Co., Chicago, Ill. The topic of Mr. VanZandt's talk was, "Ten Years of Telephone in the Far East."

"Financing of small distressed Independent Telephone Companies" was the address of Joseph L. Kennedy, chief accountant, Public Utilities Commission of Oregon, Salem, Ore.

Mr. Kennedy pointed out that due to the enormous growth of Oregon cities and communities during the past several years the demand for telephone service has been so great the additional capital required to extend and improve telephone service has been substantial and there is



Presidents of the Oregon and Washington Associations are (left to right): Lowell Brown, Silverton, Ore., president, Oregon Independent Telephone Association, and G. E. Krieger, Everett, Wash., president, Washington Independent Telephone Association.

every indication in the State of Oregon that the individually operated companies within the State will all require substantial amounts of additional capital in the future.

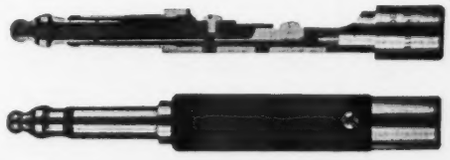
"Naturally at this time," he said, "our primary concern is with the future financing of additions and improvements and extensions of telephone properties, but in order to approach the future intelligently it might be enlightening to review briefly a little past history with respect to the financing of the construction programs of Oregon Independent telephone companies.

"The problem of raising needed capital to meet the demand for services, especially by our small privately owned telephone utilities, is well known to you all and has been a matter of serious concern in the past. During the years following World War II the only funds available to these utilities for extension of their property was the proprietor's own capital and credit, plus the small amount of net income available.

"We have dealt with the monetary problems of our small telephone utilities exhaustively, as we are very much interested in seeing that the earnings are sufficient to maintain a good credit standing. Accordingly, the majority of these utilities have been granted at least one round of rate increases to provide much needed additional revenue, but due to the size of the property and the limited amount of additional capital required, our large Institutional Investors have not in the past been interested in such loans. With very few exceptions, the local Financial Insti-

Avoid Shorts and Trouble

With TFA Plugs



The plastic insulation injected between the conductors stays solid. It covers the edge of the brass shell, positively preventing cause of most shorts. Invented, and used exclusively by TELEFON FABRIK AUTOMATIC A/S for over a generation.

These plugs provide unsurpassed precision in machining, solidity of construction, and high insulation safety.

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Don't let dampness rob your exchange of vital efficiency. The Oasis Air Drier removes up to 3 gallons of water from the air every 24 hours and that's a sure way to prevent dampness from causing operational trouble. Moisture damage can be expensive so why not eliminate it this sure easy way. Just plug the Oasis Air Drier into any A.C. 115 volt outlet. There are no messy chemicals to handle or damage your exchange or any particular damp room you choose to dehumidify.

Order your Oasis Air Drier today from Buckeye, your exchange or any room in which you use it will be dry in the dampest weather or location.

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1250 KINNEAR RD. COLUMBUS, OHIO

tutions have not seen fit to make loans to such utilities. None of the small individually owned telephone utilities operating in the State of Oregon have in the past been successful in securing loans from the Reconstruction Finance Corporation."

Mr. Kennedy stated that of the 59 independent telephone utilities operating within the State of Oregon and reporting to the commissioner, some 20 are owned by individuals. The balance are corporations or cooperatives.

"Some of the individually owned telephone systems," he said, "are very small and some are uneconomically located. However, there have been in the past very few of the small telephone properties consolidated or sold to large contiguous units. As the demand for service to be furnished by small individually owned telephone utilities within the State of Oregon continues to grow, and if these small utilities are to continue to render adequate service, it would appear that the only solution of the problem is to merge these small telephone properties with contiguous properties, which would reduce operating costs substantially, or incorporate the larger individually owned telephone properties, which would permit the issuance of equity capital and would aid materially in raising both debt and equity capital.

"A number of our small Oregon Telephone corporations have been successful not only in selling equity securities, but they have also been successful in securing unsecured loans from individual officers, stockholders, and subscribers to the service. While it is true the majority of these loans represented by unsecured notes do not extend over a period in excess of ten years, said loans have assisted materially in providing much needed capital."

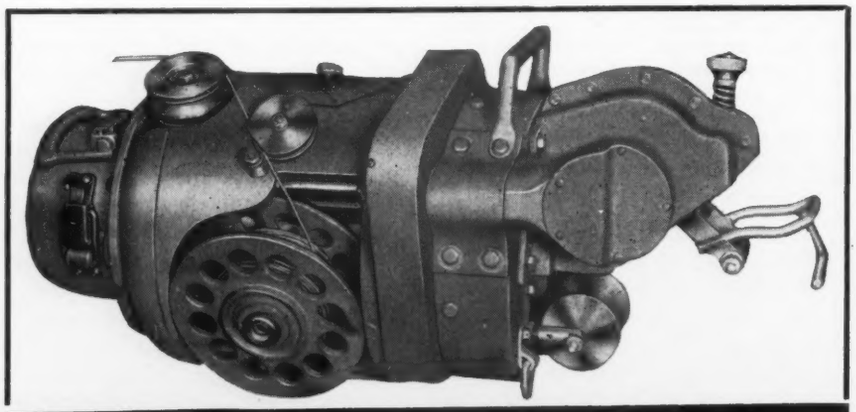
Mr. Kennedy emphasized that every effort possible has been made in the past to assist the small telephone utilities operating within the State of Oregon in securing loans or in the issuance of equity securities for the purpose of improving or extending telephone service.

"While we have not been very successful," he said, "in assisting the individually owned telephone utilities in securing additional capital, we have recommended to some of the small corporations that they borrow funds from security holders or subscribers to the service by the issuance of unsecured notes, which they have been successful in doing."

He stated that during the six year period following World War II, (1946-1951), inclusive, the Independent telephone companies operating in Oregon and reporting to the commissioner were authorized to issue secured and unsecured notes totaling $3,999,114.58, including loans from the Reconstruction Finance Corporation totaling $121,350.00, also $1,378,000.00 from the Rural Electrification Administration. Bonds totaling $3,000,000.00 were issued and $4,809,396.75 of Preferred and Common Stock have been issued and sold, or a total of $11,808,511.33 additional capital, practically all of which has been, or will be, expended for additions and extension of telephone properties.

E. C. Shaffer, chief of the Service Facilities Branch of Communications Equipment Division, National Production Authority, Washington, D. C. held a panel discussion covering the subjects of CMP, NPA Communication Order M-77 and the application Form NPAF-117 for Material and Equipment. After this discussion and the question-and-answer period following, a more thorough knowledge of these NPA forms was gained by his hearers.

During the general session Monday afternoon, there was a great lack of



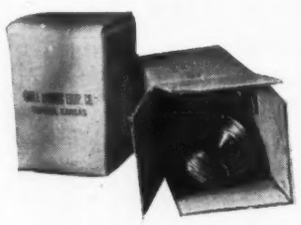
This Package Brings You Up to 67% Savings in Outside Plant Maintenance

When you specify spun cable to protect your outside plant investment, insist upon the Neale Model "D" Spinner. It comes to you complete, with all of the accessory tools to service and maintain the machine. And you can work toward a saving in outside plant protection of as much as 67 per cent . . . the experience of telephone companies in cable spinning, reported from all over the country.

Cable spinning is fast . . . economical . . . and practical . . . for new construction as well as maintenance. You get all the possible advantages of cable spinning when you equip your crews with Neale Cable Spinners. Both the Model "D", shown above, and the Model "B" One Man Cable Spinner are supplied to you complete in every detail . . . no extras to buy.

The Cable Spinning Company maintains an around-the-clock service in spare parts. For complete information on Cable Spinning Tools, write or phone your jobber today.

For Best Results Use Neale Wire



Available in 7 different types . . . all made to meet the toughest construction and corrosion problems.

THE WORLD IS SPINNING—TOO! PHONE 2-7234-5

Cable Spinning Equipment Co.

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DON'T BREATHE!
(it'll blow away)

OPEN CAREFULLY warns the boxtop...for even a faint whiff of air might whisk away this gossamer wire with its tiny speck of oxide. That would be too bad because it's a very useful part of the complex array of apparatus used in this country's telephone service...and it's the tiniest single part, too!

Some of the parts used by the nation's telephone companies are little, like this bead thermistor which helps control the flow of current in telephone-talk; some, like dial central office equipment, are big, complex.

For 70 years, Western Electric's primary job has been manufacturing dependable "parts"—big and little—that help make America's telephone service the finest on earth.

Western Electric

TELEPHONE APPARATUS AND CABLE

ladies in the audience due to the fact that they were attending a luncheon and game party given them by the Oregon and Washington Associations and by the following manufacturers: Ansonia Electrical Co.; Automatic Electric Sales Corp.; Cook Electric Co.; Cable Spinning Equipment Co.; Electric Storage Battery Co.; General Telephone Directory Co.; Graybar Electric Co.; Hubbard and Co.; Kellogg Switchboard & Supply Co.; Leich Sales Corp.; The North Electric Manufacturing Co.; Stromberg-Carlson Co.; Telephone Directory Service Co.; Telephone Repair and Supply Co.

Mrs. W. R. Jarmon was the very charming hostess of this affair, together with Mrs. C. E. Hoy, Mrs. G. E. Krieger, Mrs. L. E. Brown, Mrs. W. H. Dean and Mrs. Ray Dalton. This entertainment proved such a delight to the ladies that is is apt to become very popular with them. Much praise is due Mrs. Jarmon and Mr. Walter A. Boro of the General Telephone Co. for their part on the Program Committee in bringing about this fine entertainment for the ladies. The banquet was held Monday evening, with Richard S. Munter, attorney, of Spokane, acting as Toastmaster, and he was never in better form with that dry brand of humor and innuendo he always has at the tip of his tongue. After professional entertainment the diners heard an address by Douglas R. Stringfellow, Radio Station KLO, Ogden, Utah.

As Mr. Stringfellow has appeared at many functions of this nature it is needless to say that he gave a very inspirational talk, telling of some of his experiences while a prisoner of the Nazis in Germany during World War II. Mr. Stringfellow stressed the point that we Americans must look to ourselves to keep our American liberties and freedom, and what we most assuredly need is a more spiritual life. He was of the opinion we should let the United Nations go as it has not proved to be of help to us.

Tuesday morning, bright and early, those hardy individuals, the Pioneers, of the Northwest Chapter of the Independent Telephone Pioneer Association, held their annual breakfast and business meeting.

The meeting was called to order by George S. Gaines, acting president in the absence of President D. O. Hood.

Election of officers and executive committee followed, resulting in election of the following: President, D. C. Wilkinson, Kennewick, Wash.; Vice President, Earl Dean, Hood River, Ore.; Secretary-Treasurer, J. W. Baker, Spokane, Wash.; Executive Committee: T. J. Wells, Redmond, Ore.; B. B. Schlaefer, Forks, Wash.; David Burr, Kirkland, Wash.; Harley Barber, Everett, Wash.; and Murray Dodson, White Salmon, Wash.

The final general session, held Tuesday morning, June 23, was presided over by Lowell Brown, who introduced L. W. Hill, president of USITA and of the Carolina Telephone & Telegraph Co., Tarboro, N. C. Mr. Hill spoke on the topic, "The Independent Telephone Industry in Changing Times." He brought out to the members a fine report of what has been accomplished in the industry along national lines.

"A Lesson from an Old Primer" was the subject of the address given by R. C. Reno, Editor of TELEPHONY magazine, Chicago, Illinois. Mr. Reno was an able speaker and kept his audience's full attention while he taught the lesson.

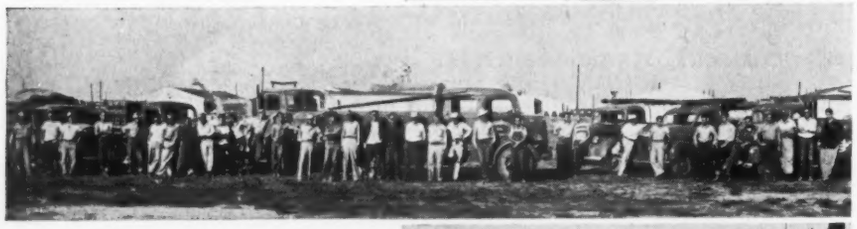
The main theme throughout the convention brought to the members by so many of the speakers was that we should keep hold of the American way of life. But the final speak-

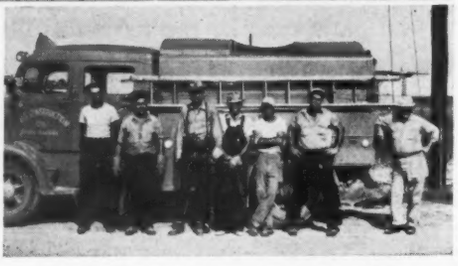
We're Working for Uncle Sam, Too!

We're proud to do our part in the defense program. The Neale Construction Company has been chosen by the Government for a number of outside plant construction jobs. And we have bent every effort to complete all our defense assignments in record time.

In the coming year there may well be still more defense work for us to perform. However, our telephone company customers may rest assured that we are still fulfilling our contracts for new construction, maintenance and emergency repair on time. We will be quick to notify you, if a defense contract will necessitate any postponement in scheduling work for you. You understand, of course, that vital communications for the defense of our country must come first.

Call on Neale for any outside plant job. All work done to A.T.&T. specifications unless otherwise specified. Our trained crews are backed by complete engineering and procurement service.





These fine Signal Corps photographs show the men and equipment of the Neale Construction Company on the job at Fort Hood, Texas. Top picture shows the Neale Cable Spinner in operation. Center shows the full complement of Neale personnel assigned to the job. Bottom shows a crack Neale crew and their modern construction equipment.

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er, Colonel Howard Zellhaefer, Fairchild Air Base, Spokane, Wash., had no such narrow view. In fact, he did not even consider the world, but the universe and a trip to the moon. His subject was, "Possibility of Interplanetary Communications." The Colonel said the trip would likely take place in 10 or 15 years from now, in an atomic energy powered rocket, with likely 15 men aboard to make up three eight-hour shifts a day. He said they would only take enough food for nine days as that was the time it would take to fly to the moon, around it and back to earth, and if they were not back in nine days they would not be back. The nonchalent manner in which the Colonel gave the talk, accompanied with plenty of action of the hands and facial expressions, together with the thoughts of such a trip, was a refreshing note on which to close the convention sessions.

Separate business meetings of each Association were held at 2:00 p.m. Tuesday afternoon. These meetings resulted in election of the following officers and directors:

For the Washington Independent Telephone Association: President, B. Lamar Gaines, Cascade Tel. Co., North Bend; Vice-President, Don Childers, Oregon-Washington Tel. Co., Sunnyside; Sec.-Treas., J. W. Baker, Spokane, Wash.; Directors—L. M. Curry, Yelm; Ray Dalton, Everett; Wade H. Dean, White Salmon; Hugo Finholm, Gig Harbor; W. R. Jarmon, Spokane; G. E. Krieger, Everett; Wm. G. Pottratz, Cowiche; J. R. Reynolds, Naches, Wash.; R. E. Rudolph, Ellensburg, Wash.; and G. J. Stover, Mount Vernon, Wash.

For the Oregon Independent Telephone Association: President—T. J. Wells, Redmond; Vice-President, J. H. Dillard, Nehalem,; Sec-Treas., Leslie A. Gritten, Everett, Wash.; Directors—Ethel A. Bauman, Lebanon; M. F. Berglund, De Lake; Lowell Brown, Silverton; J. Cavanaugh, LaGrande; Floyd Day, Estacanda; Earl Dean, Hood River; D. O. Hood, Medford; R. D. Johnson, Detroit; L. Miller, Yamhill; J. Nuckols, Halsey; Donald Kyle, Spray; Robert Wells, Sheridan; and H. O. Wiswell, Haines.

California Convention Report

(*Continued from page* 58)

for each five cents of the toll terminal charge will be paid companies for the bookkeeping necessitated by the new charge.

In other actions, the committees have worked with Pacific Telephone and Telegraph in the transfer of that company's telegraph properties to Western Union, work has been done to keep small companies out of the hands of cooperatives by finding larger companies to buy or finding buyers with enough capital to modernize them and put them on a paying basis.

In addition, said Mr. Wade, Frank Rhodes, CITA secretary, is constantly working with the small companies, helping them to get rate increases, helping them to obtain financing, and counselling them in many ways. All this leads to improved service for the subscribers of small companies, which is the basic problem of the small companies, Wade said.

In its regular election of officers, the California Independent Telephone Association voted to retain substantially the same officers and directors as it had had last year. O. E. Emley, who had been first vice president, became second vice president, and Lyndon Farwell, who had been second vice president, became first vice president. President C. F. Mason and Secretary-Treasurer F. V. Rhodes were re-elected.

President Edwin M. Blakeslee, of the Associated Company, presented the resolution committee's report which included a resolution commending the USITA for its work in behalf of the Independent industry and urging member companies to cooperate by responding promptly to any request for operational information and data regarding the interchange of toll messages with the Bell System. The resolution was unanimously adopted.

In a series of five panel discussions, members present at the convention were given the opportunity to find the answers to many of the problems which had bothered them during the year past. Attendance at the panel discussions exceeded expectations in all instances, and the discussions were uniformly lively and interesting.

In a panel discussion on plant accounting headed by J. P. Maguire, vice president of Kern Mutual Telephone Co., specific problems of member companies in handling their plant accounting problems were discussed and, in many instances, solved. Participating on the panel with Mr. Maguire were George S. Blake of Asso-

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ciated, Evan E. Chappuis, of Susanville, and Allan R. Stacey of Sunland-Tujunga.

In a panel which was of interest to practically every department in a modern telephone company, the group headed by M. H. Alexander, plant superintendent of Kern Mutual Telephone Co., discussed the problem of growth in the State of California and how the growth affects the telephone industry. In the course of the panel discussion the work of forecasting was related to engineering—buildings and outside plant facilities, from both the short and the long range angles, to traffic, in which it was shown how station forecasts were used with traffic estimates of switchboard and toll circuit equipment, and to itself as a means of developing new techniques of forecasting.

Methods of forecasting, objectives of forecasting, and forms used in traffic forecasting were explained. Individual questions were answered as much as possible, but the panel ran overtime long before all of the questions could be answered.

Participating with Mr. Alexander were Robert Mitchell of Los Gatos Telephone Co., D. A. Perigo of California Water & Telephone Co., and John Scott, Owen G. Jarboe, and Louis D. Yard of Associated.

A panel on commerical problems and office routines headed by Richard D. Crowe, manager of Dos Palos Telephone Co. found too much audience interest to stay long with a theoretical discussion. Among the problems discussed were those of collections and handling of delinquent accounts, which occupied most of the time allotted the panel. While it was agreed that no two areas presented the same problems, most of the audience felt that out of the discussion had come valuable techniques for all to use in their own companies.

With Mr. Crowe on the panel were H. O. Davis of Los Gatos Telephone Co., James T. Naylor of San Joaquin Telephone Co., and Mrs. Jean D. Weir of Sunland-Tujunga Telephone Co. Many members of the audience also addressed the group from the panel table.

Personnel of The Pacific Telephone and Telegraph Co. conducted a panel discussion on the subject "Operator and Subscriber Toll Dialing and Coordination of Independent and Pacific Company Facilities and Practices."

In a general panel, E. C. Shaffer of the National Production Authority in Washington was able to answer many questions which have concerned members of the telephone industry. Speaking frankly, Mr. Shaffer appraised the controlled materials situation, paying special attention to copper and steel. He also outlined the procedures to be followed under new regulations placing telephone buildings under the communications division for the first time and explained new provisions for self-rating.

Participating on the panel with Mr. Shaffer were Knox Hager of California Water & Telephone Co. and H. Lee Williamson of Associated.

In addition to the purely business aspects of the convention, a highly successful and well-attended dinner dance was held the first night of the convention in the Biltmore Bowl. Convention guests dined and danced to the excellent music of the Hal Derwin band and watched a revue called "Sugar 'N Spice."

New Equipment Ordered For Johnstown, Pa.

IN CONTINUATION of its long-range modernization and expansion program, the General Telephone Co. of Pennsylvania has placed an order with Federal Telephone & Radio Corp., Clifton, N. J. manufacturing associate of the International Telephone & Telegraph Corp., for 1,600 lines and 2,900 terminals of step-by-step automatic dial switching equipment for Johnstown, Pa.

Installation of this equipment will bring the number of lines and terminals ordered from Federal during the past three years to 6,800 and 15,300, respectively. The first of these orders, which called for a total of 3,200 lines and 7,600 terminals of Federal "step" apparatus, was cut over during 1950. Another 2,000 lines and 4,800 terminals were installed and placed in service in 1952.

In addition to the step-by-step equipment at Johnstown, the General Telephone Co. is increasing the capacity of its Westmont exchange from 1,000 to 1,400 lines, and is establishing a new 1,000-line office at Geistown. Both of these exchanges, which are located in surburban Johnstown, are also equipped with Federal dial switching apparatus.

New Bulletin On PLP Dead-Ends

BULLETIN 35-200 on Preformed Dead-Ends details how the units develop the full strength of all grades of strand and conductors without any concentrated pressures that could cause conductor deformation.

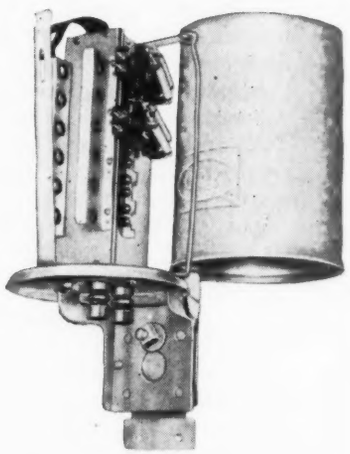
Copies of Bulletin 35-200 are available from Preformed Line Products Company, 5349 St. Clair Ave., Cleveland 3, Ohio.

Construction M

With the Double Gu
and America's Le

versatile new

S-20 V
cable terminal



takes any size compression coupling from 6 pair to 51 pair...

Made with two cable entrances for use with plastic cable, the new Cook S-20 V Cable Terminals simplify cable installation.

They can be ordered in advance without compression couplings—and the couplings and pipe plug ordered later to conform to the specific cable layout. *Or,* if plastic cable additions are ever needed, the compression couplings can be easily adjusted *in place* to conform to the revised cable layout without removing the S-20 V Cable Terminals from the poles.

The S-20 V can be used separately or as part of the Cook Trans-Mount System of Protection and Distribution. All hot galvanized steel construction, the complete terminal is designed for maximum service under all conditions.

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maintains constant voltage output over the complete load range!

Maintains the close voltage limits required by telephone systems and reduces such common difficulties as incorrect ringing, line noises and lamp failures. The constant potential method of charging prevents battery gassing and water loss. A smaller maintenance crew can handle a greater number of installations.

A small storage battery floated across the terminals of a Raytheon RectiChargeR for emergency and peak period use is kept at constant cell voltage so that it never becomes overcharged or undercharged . . . thus prolonging the life of the battery.

The frequent use of the Raytheon RectiChargeR in unattended exchanges is ample proof of its dependability. Available from 1.0 to 100.0 amperes with either 24 or 48 volt output.

*Reg. U.S. Pat. Off.

"dependable" *means both the trade-mark & the guarantee of cross-arms by*
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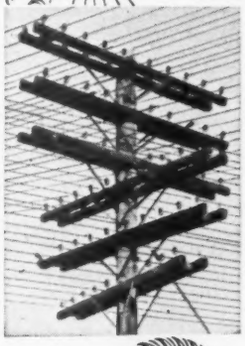

The finest pole and wire installation is useless if cross-arms fail. "Dependable" Cross-Arms are all that the name implies—made of sturdy, American woods, long seasoned, fashioned and finished to stand every weather condition from desert heat to mountain blizzards.

In Douglas Fir—Creosoted Yellow Pine or Gulf-Red Cypress.

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Many Planté batteries are still in active full-float service after twenty, thirty, even forty years! That's because Planté plates are heavy, solid sheets of pure lead. In these batteries Gould has eliminated the primary cause of self-discharge, capacity losses and shortened battery life. Cut maintenance, charging and replacement costs to a minimum. Choose Planté.

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EQUIPMENT AND ELECTRONIC CARILLONS • INDUSTRIAL INTERCOMMUNICATION SYSTEMS • TELEVISION, RADIOS AND RADIO-PHONOGRAPH

"Rehabilitation of any telephone plant requires the careful preparation of outlined plans."

Edited By
JAY G. MITCHELL

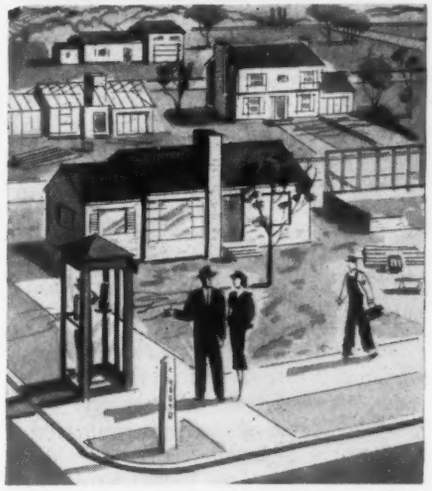
Questions and Answers

IN THIS ISSUE, Mr. Mitchell discusses—(A) Preliminary Reconstruction Plans, and (B) Simple Method of Spinning Plastic Cable to its Messenger.

QUESTION:—We are making plans to rebuild most of our small outside telephone plant and would be very grateful to you if you would answer one of the most important questions that we have encountered. That is the question as to the best type of outside cable terminal to install as it is our present preliminary plan to standardize our plant items as far as possible so that the finished job will be suitable for conversion later to dial. At this time it is the outside plant that is being planned for rebuilding. We read your material in QUESTIONS AND ANSWERS *regularly and have found it to be of great value in the management of our small plant. We wrote to you some weeks ago about this but evidently the letter was not properly directed or was mismailed as we have never received a reply to it.*

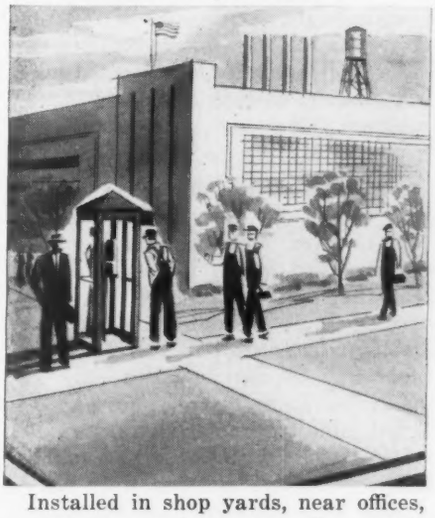
ANSWER:—This inquiry indicates that this company is taking a course in the preparation of its telephone system for meeting the demand for improved service that might well be followed by any and all telephone companies large or small in the same operation. The very first step in such an operation is, almost obviously, the making of a layout of the outside plant *as it must be to meet the conditions* suitable for improved Central Office and Subscribers' Station Equipment later. It is strongly recommended that you consult with your large neighboring telephone company for suggestions. If this is not convenient or desirable then it is suggested that you employ experienced help in making the rough layout of the proposed plant. In making this layout it is, of course, very necessary to provide for all probable demands for service in the future. This demand should be worked out, in my opinion, for at least ten years and should be based upon the location of all present subscribers services and

Outdoor Paystations are Moneymakers in New Subdivisions



Placed at strategic points, outdoor paystations bring in a substantial amount of revenue. They also provide the immediate convenience and protection of telephone service to new homeowners who otherwise would be waiting impatiently until instruments could be installed in their homes. The result is a substantial gain of priceless goodwill for the telephone operating company. Reports indicate that the unusually fine patronage earned by these popular street-corner pay telephones has caused many companies to leave them permanently installed in residential sections as a regular source of paystation income.

Factories are Profitable Spots for Outdoor Paystations



Installed in shop yards, near offices, outdoor paystations pay off rewardingly. Employees like them as they enable telephone calls to be made privately. Management supports them, as they help keep business lines free. They are especially welcome at new factories where all the business telephones ordered have not yet been installed. Write to Automatic Electric for details on outdoor Autelco Paystations, booths, and signs. *(Advertisement)*

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They do not mar the insulation, and can be used over and over. Available in two sizes to handle cables from ⅜ to 1⅛ inch.

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also, in addition, the location of all possible future subscribers. Such a layout involves the preparation of a very carefully laid out map of your territory both that presently served and that which is likely, within the extent of the proposed future view, to be occupied by future subscribers to your service. This study must be made before any cable or outside wire can safely be ordered not to mention poles, cross arms, cross-arm braces and other plant construction material.

It is desirable also that such a map, with the limits of your service area and your base rate area clearly defined, be prepared for filing with your tariff to be submitted to the COMMISSION with your schedule of revised and increased rates when and if the plant rehabilitation is completed and the improved service is soon to be supplied. The map to be filed with your Commission should not, of necessity, show the location and established of the present and future service but the map that you are to use in the *planning of the renewed outside plant* must, obviously, be most completely detailed in all these respects. If you contemplate any underground cable installations this must be shown on a separate map but the two maps must be coordinated with each other in order to avoid costly error. In laying out your new underground cable consideration must be given, of course, to any plans of the city authorities to change the location or width of streets or alleys, sewers or street levels. Pole lines can be relocated but underground cable conduit and manholes are relocated only at great cost in most cases.

The selection of your cable terminals, as regards the selection of the manufacturer, is a simple matter involving your own preference and the price that must be paid for the types selected. It is my opinion, however, that *circuits entirely in underground* cable may be distributed directly to the Subscribers Stations in unprotected cable terminals. Telephone circuits which include underground cable conductors and *any open wire* should be distributed from the cable to the open wire in protected terminals with a fuse and air gap arrester in each conductor at the terminal. Telephone circuits which include aerial cable conductors and *any open wire* should be distributed from the cable to the open wire in protected terminals with a fuse and air gap arrester in each conductor at the terminal. Open wire telephone circuits which include only open wire

and a short section of entrance cable or hoopy-kack at the central office should be distributed from the terminal at the end of the entrance cable, *and there should be one placed there*, to the open wire in protected terminals with a fuse and air gap arrester in each conductor at the terminal. Of course the Central Office Equipment must include a heat coil and carbon block arrester for each conductor entering the office whether it is wholly underground or partly aerial cable or open wire.

At each Subscriber's Station, except those served by wholly underground cable conductor circuits, there must be installed an approved substation protector which includes an approved fuse for each conductor and an approved carbon block arrester with a *good solid low* impedance earth connection. These protectors at the Subscriber's Stations should also, in my opinion, be the type that has a *one piece* porcelain base.

In deciding upon the protective equipment, unless the conditions are not normally average, it is my opinion, and this will not be approved by many experienced telephone plant executives, that the fuses should be those having a normal operating rating of about seven amperes. In extremely hot climates such a fuse will be somewhat more sensitive than it will be in cooler climates but, provided the air gap arrester is in good condition, this fuse will afford adequate protection. Fuses of lower nominal rating than seven amperes will, of course, be more frequently operated than those of seven amperes with no increase, in my opinion, in the protection but with a substantial increase in the number of interruptions to service with a corresponding increase in the labor time of clearing outside trouble. Of course each protected cable terminal in the plant must be provided with a good solid earth connection of low *impedance* also.

These are very general random comments designed to be helpful. If sufficient interest is shown in this subject a consistent and detailed outline will be prepared and included in QUESTIONS AND ANSWERS because this stage of the rehabilitation of any telephone plant is most important and when the outlined plans are carefully prepared the cost of such preparation will be reflected in marked economies in the cost of the finished and improved plant. There is one important final suggestion that should have been given earlier in this answer to your inquiry. That suggestion is this and it is to be emphasized. In laying out the maps defining your service area and base rate area place the dividing line between the territory you are to serve and that of your neighboring company through the lots and *not along the roads*.

It is regretted that your first letter went astray but your second inquiry, under those circumstances, is greatly appreciated. Telephone Engineer Publishing Corp. has published a most useful book entitled "Rebuilding the Outside Plant," written by Mr. John S. Reed. It is suggested that you order a copy as a permanent reference.

"Conservatives in Congress fear that Federal spending has reached the point where voters receiving government checks will be the major factor in electing Presidents." — *(New Sharon (Iowa) Star.)*

QUESTION:—In a recent letter from an old friend in the telephone industry there are some comments which may be helpful in some telephone plants. These comments are quoted from the letter below.

ANSWER:—As to putting up an Ankoseal Cable would state our recent experience with two pieces of eleven pair Ankoseal cables each about 2,000 feet or more long. Lashing is the only and the simplest way and pretty quick too. The first piece we attached from on top of a truck so we could work on the messenger wire. But it wasn't such a pleasant job as it was very windy up there (20 to 25 foot poles).

The next piece we had to thread through in between several ten pin leads. So we put hay rope pulleys on each pole and pulled the whole length, starting at the reels, with the messenger (12 H.T.L.) and the cable lashed together. All went surprisingly quick, two doing the lashing together and two pulling the cable and messenger lashed together through the hay rope pulleys. We fixed us a very simple holder for the spool of lashing wire which one revolved around the cable and messenger with an assistant to hold things tight and feed the cable off the reel. After all was up we stretched the cable and removed the hay rope pulleys which can be opened by removing a bolt and then can be slid off the rope or wire.

This ingenious method of spinning the cable and messenger is no doubt most useful in the case of small cable and it is described because it was a success in this case.—THE END

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LOWEST COST POSITIVE RIGHT-OF-WAY CLEARANCE

More Killing Units Per Dollar
More Certain, Effective Results

FOLIAGE SPRAY or YEAR 'ROUND BASAL BARK TREATMENT

Field-Tested on hundreds of thousands of miles of line in all sections of the Nation.

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Indiana Steel & Wire Company

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National Carbon Company
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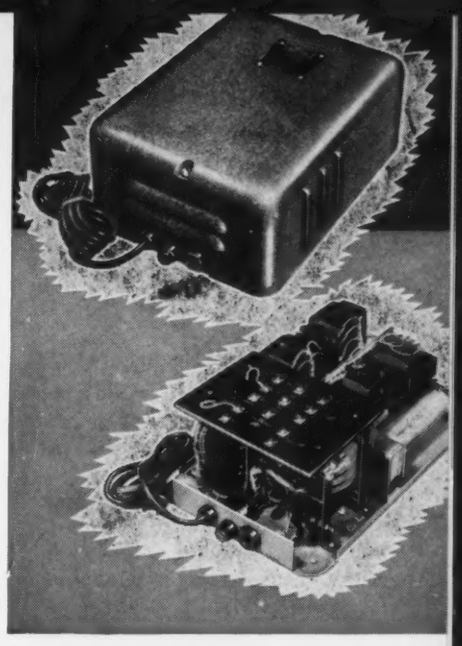
Reliable-Economical! "Eveready" "Columbia" "Gray Label" telephone dry cells give you dependability, plus economy thru higher sustained voltage and extra service life. Made by NATIONAL CARBON COMPANY, a Division of Union Carbide and Carbon Corporation.

For All Telephone Soldering—Original dual-heat Weller Soldering Guns handle all jobs. Instant heat saves time, power. Prefocused spotlights and longer reach—no wedges or flashlights. Tough, dielectric plastic housing. Made by WELLER ELECTRIC CORPORATION.

Improve Your System with Copperweld. Non-rusting Copperweld Line Wire provides the best conductance of any high strength conductor. Has great strength for safe, economical, long-span lines—plus the ruggedness to withstand severe weather. COPPERWELD STEEL CO.

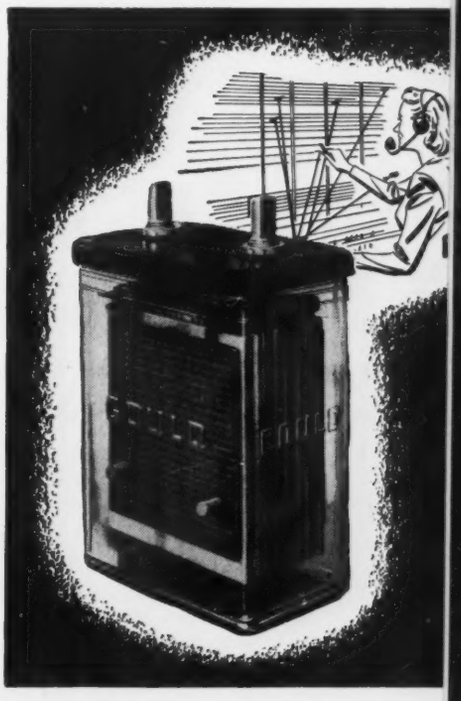
Available Now for use with modern cable spinners, is Crapo Galvanized Steel Lashing Wire. Heavily-galvanized; .091″ diameter, comes in 325-ft. coils. "Stainless Steel" Lashing Wire is also available in .045″ and 0.65″ diameters. Both products of INDIANA STEEL & WIRE CO.



12 New Models—5 Cabinet Sizes comprise this new line of packaged power for Sub-Cycle "RT-Units" for P.B.X. and small switchboards. Both ringing and talking power are combined in one cabinet. Made by LORAINE PRODUCTS CORPORATION. Write for Bulletin 159.

Save Drop Wire with the new Cook Party Line Junction. Ideal for terminating and protecting the cable pair drop, the cable pair, and distributing four party line drops. Porcelain base, steel mounting bracket and zinc- non-corrosive cover. Made by COOK ELECTRIC COMPANY.

Poles That Last!—the fine creosoted Southern Pine Poles selected by T. J. MOSS TIE COMPANY are exceptionally sturdy and durable—will give longer years of service. Poles are uniform in size and pressure-treated to conform to rigid standards of quality.



Outstanding Battery Performance is yours when you choose Gould Planté Batteries. Thick, grooved, pure lead positive plates give many years of trouble-free service! Made by GOULD NATIONAL BATTERIES, INC., a leader in their field. They're the finest money can buy.

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720 S. W. Washington St., PORTLAND 5, OREGON

Presenting Facts To Employers

(Continued from page 47)

grasp the presentation of our annual report more readily than they had been able to in previous years. The question asked by the majority of the employees was "Why didn't we have this many years ago?" By understanding the basic economics of American Business and the operations of our Company, we have created better employee-company relations and the employees today are better citizens of our community. I think that one of the big factors in putting the program over was the selection of rank and file leaders. This created a feeling in the groups that they wanted to listen as it was one of their own people talking to them and he truly believed what he was saying. If supervisors had been used as leaders this feeling could have been lost. In previous years employees had felt they had to listen to the report—this is not the feeling now.

Over half of our employees are stockholders of our company and through these discussions we have been better able to acquaint them with conditions and operations of the company. It was emphasized that the majority of our stockholders live in the Islands, so we feel that our company is truly like our nation; we are of the people, by the people, and for the people. Our stockholders are Island people and our subscribers are also Island people.

This form of educational presentation of our company's operations has been so well received that the same plan has been used again this year. While I was on the mainland giving the 1951 presentation to the Independent Telephone Executives' Conference at Colorado Springs, and in Chicago and Los Angeles, rank and file leaders were using the same technique back home.

The first part of the program showed with charts the economy of the company and how it was tied to the economy of the Islands. Naturally each employee's future was in turn tied to the future of the company. All of us are now more interested in Hawaii's economy.

The second day's session then dealt with the presentation of our Annual Report, using the same visual and plan with the slap-board, and thus gave our employees a clear picture of our company's operations for the year.—THE END.

Industry News Briefs

(Continued from page 22)

dale, N. D., was received recently by officials of the Dickey County Rural Telephone Mutual Aid Corp.

Written for the largest single amount deposited in the Ellendale First National Bank, the check makes more than $81,600 available to the co-op as a portion of the $1,046,700 allocated them by REA last year.

This first sum of money will be used entirely to begin purchase of the 15 Independent telephone companies operating in the co-op's area which will be absorbed by the new system, according to John Viken of Ellendale, new chairman of the board of directors.

Mr. Viken was recently named to head the board. He replaced B. L. Nelson of Fullerton, former chairman.

Other officers are Glen Coleman of Crete, vice president, who succeeds himself in that position, and Albert Hauck of Forbes, secretary-treasurer, who replaces Viken.

The co-op will continue to receive money from time to time as it is needed and in that way will pay interest to the government on only the portion that has been withdrawn. Interest payments on the loan will not begin, however, for a period of two years.

Portales, New Mexico Co-op Awards Construction Contracts to Irby Co.

THE IRBY CONSTRUCTION CO., Jackson, Miss., has been awarded the contract to construct the outside plant of the Roosevelt County Rural Telephone Cooperative, Portales, New Mexico, subject to final approval of authorities, Glen Ezell, manager, has announced.

The Irby company was low bidder on the outside plant and was granted the contract by the co-op's board. Ezell said, however, that the final approval will not be given until approximately 90 per cent of the right-of-way easements are secured.

Irby Construction Co. submitted the lowest bid on both sections of the project. Their bid for the approximately 514 miles of line was $309,386.27. Their bid for about 369 miles of line was $221,744.61.

Construction Ma
With the Doubl
and America's
24-hour guaranteed
direct current, with
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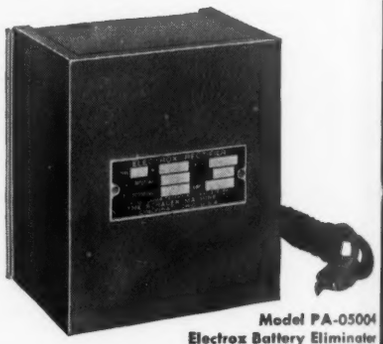
Model PA-05004
Electrox Battery Eliminator
Designed specifically for the Operator's Circuit on Magneto Switchboards, the PA-05004 type illustrated guarantees current even if your AC fails!
When operating from 110 volt, 60 cycle lighting circuit, it delivers a constant, humless direct current. If the alternating current supply fails, a built-in Power-off Relay automatically transfers the operator's circuit to stand-by dry cells.
Other models available for Lamp Signal (PBX) and Automatic (PAX) systems. Products of Rectifier Division, Schauer Manufacturing Corp.
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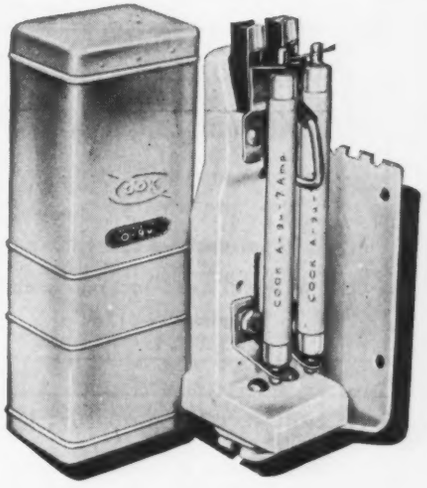
The superior tensile properties inherent in steel are used to full advantage in *Crapo* Galvanized Strand. The tightly adherent zinc coating applied by the *Crapo* Galvanizing Process provides lasting protection against corrosion, and prolongs the life of the strand. Controlled ductility makes *Crapo* Strand easy to work and to serve. Low first cost and low yearly cost result in important economies for operating companies.

The all-round dependability of *Crapo* Galvanized Steel Strand is being demonstrated constantly by its outstanding performance in service. There is a size and grade for all practical needs.

LONG LIFE—LOW COST

outdoors or indoors . . .

rely on Cook type "O-9u" sub-station protectors



The Cook O-9u Protector is equipped with A-9u 7 amp. lavite fuses and lightning arresters mounted on a heavy, moisture-resistant porcelain base, and enclosed by a weather-tight zinc hood. This protector meets all Underwriter requirements and is listed by the Underwriters' Laboratories.

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Before a single inch of Kennecott cable leaves the mill, it is tested for Dielectric Strength, Insulation Resistance, Conductor Resistance, Capacitance and Fixed Dimensions. Such care in manufacture is your warranty of efficient, trouble-free performance in the field. Specify "Kennecott"—distributed by Stromberg-Carlson.

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DAVIS CONSTRUCTION CO., Sullivan, Mo.

Dial Service Planned For Russell, Kans.

As PART OF its modernization and expansion program, the American Telephone Co., Kansas City, Mo., has placed an order with Federal Telephone & Radio Corp., Clifton, N. J., manufacturing associate of the International Telephone & Telegraph Corp., for 2,200 lines and 3,100 terminals of Step-by-Step automatic dial switching apparatus for its exchange in Russell, Kans. The new equipment will replace a manual installation.

The American Telephone Co. is a subsidiary of United Utilities, Inc.

The new Step-by-Step automatic telephone equipment, together with a Federal 8-position toll switchboard arranged for inter-toll switching, will be housed in a new and modern exchange building soon to be constructed in Russell.

The change-over will bring modern dial telephone service to 3,300 subscribers in Russell, which is an important oil production center located approximately 75 miles west of the city of Salina, Kansas, in the heart of the Kansas wheat belt.

New Folder On Installation & Operation Of Telephone Batteries

GOULD-NATIONAL Batteries, Inc., Trenton 7, N. J. offers a six-page

(*Please turn to page* 87)

Ed Falls, formerly the Motorola Communications and Electronics Division zone manager for Southern California, has been selected as regional manager for the division's southwest area comprising Texas, Oklahoma, Arkansas, Louisiana, and New Mexico. He will succeed John Jipp who has been advanced to a new West Coast assignment for the company.

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No matter what happens to central station power during a bombing attack, electricity for essential defense needs is always available with Onan Electric Plants. Onan units, mounted on truck or trailer, or carried in the trunk of a car, can be rushed to any point where power and light are needed. Sturdy and dependable, Onan Electric Plants are an important link in a city's defense against disasters of any kind.

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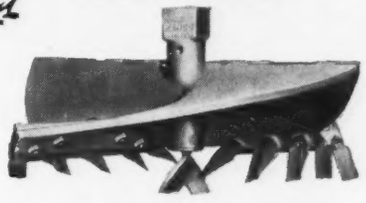

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★ Bores true, clean holes in any soil, most sandstones and hardpans, frozen ground, permafrost!
★ All wearing parts replaceable on job!
★ Made in 15 sizes, 10" to 54" hole diameters, to fit all makes of heavy-duty earth boring machines. Larger sizes on order.

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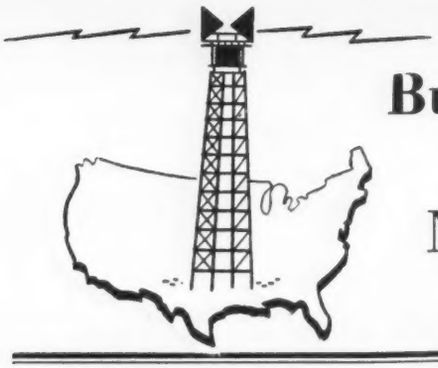


The Buyers' Directory *and* New Products' Showcase

ADVERTISING, Directories—General Telephone Directory Co., 604 Pine Ave., Long Beach, Calif., and 185 N. Wabash, Chicago, Ill.—**[ADV. 1]**

BELTS — CLIMBERS — COMPLETE LINEMEN'S EQUIPMENT, W. M. Bashlin Co., Bashlin Bldg., Grove City 1, Pa.—**[ADV. 2]**

BELTS — CLIMBERS — PLIERS — SAFETY STRAPS—CONSTRUCTION TOOLS. Klein & Sons, Mathias. 3200 Belmont Ave., Chicago 18, Ill.—**[ADV. 3]**

BOOTHS—Acoustic Telephone—Sherron Metallic Corp., 1202 Flushing Ave., Brooklyn 6, N. Y.—**[ADV. 4]**

BRUSH & WEED KILLERS—Thompson manufactures many types of brush and weed killers. Write for helpful information on specific problems. Thompson Chemicals Corp., St. Louis 3, Mo.—**[ADV. 5]**

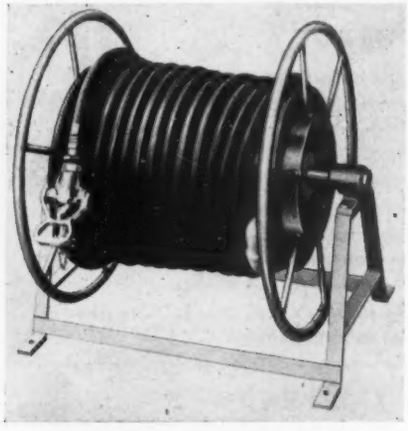
CABLE, All Plastic, Aerial, Duct, Direct Burial, PBX, Switchboard.—The Ansonia Electrical Co., Ansonia, Conn.—**[ADV. 6]**

CORDS, Instrument and Operators—Commercial Cord & Supply Co., 26 Main St., Clifton Springs, N. Y.—**[ADV. 7]**

CORDS, Switchboard & Telephone—Runzel Cord & Wire Co., 4727-31 Montrose Ave., Chicago 41, Ill.—**[ADV. 8]**

ELECTRIC HOT WATER HEATERS. Thermostatically controlled for any hot water heater, Vulcan Electric Co., Danvers 17, Mass.—**[ADV. 9]**

FURNACES—For quickly and economically melting lead and paraffin—Mutual Liquid Gas Equipment Co., Inc., 3600 W. Imperial Highway, Los Angeles, Calif.—**[ADV. 10]**



ONE MAN HOSE REEL

A new, continuous flow hose reel for fighting fires instantly and keeping water damage to a minimum has recently been developed by Wirt & Knox Mfg. Co., Philadelphia 32, Pa. With the new reel, precious time is saved because water pressure is available at the hose nozzle even when the hose is coiled on the reel. A swivel joint connection in the pipe line permits application of a full stream of water on the fire while the hose is being unreeled. —Check New Product 438.

GUY WIRE DISPENSER

The A. B. Chance Co., Centralia, Mo., has announced the manufacture of a new aid to line construction crews, the Guy Wire Dispenser. The dispenser adds speed and safety to guying jobs by feeding the wire smoothly while eliminating the whipping of guy strand ends. Guy Wire is fed from the center of the coil through the dispenser's square opening. This square hole prevents uncoiling of the strand. For complete information check New Product 439.

INSULATORS, Porcelain—Porcelain Products Inc., Box 300, Findlay, Ohio.—**[ADV. 11]**

LIGHTWEIGHT PULLERS—Coffing Hoist Company, 800 Walters St., Danville 5, Ill.—**[ADV. 12]**

PIPE PUSHERS—Giant Manufacturing Co., South 6th St., at 12th Ave., Council Bluffs, Iowa.—**[ADV. 13]**

POLE HOLE DIGGERS—For derrick mounted trucks. Tele-E-Lect Products, Inc., 9613 Minnetonka Blvd., Minneapolis 16, Minn.—**[ADV. 14]**

POLES, Southern Yellow Pine—Colfax Lumber & Creosoting Co., Inc., P.O. Box 23, Pineville, La.—**[ADV. 15]**

POLES, Southern Yellow Pine—Taylor Colquitt Company, 290 E. Main St., Spartanburgh, S. C.—**[ADV. 16]**

POLES, Southern Yellow Pine—Texas Creosoting Co., Orange, Texas.—**[ADV. 17]**

PROTECTIVE EQUIPMENT—Reliable Electric Company, 3145 Carroll Avenue, Chicago 12, Ill.—**[ADV. 18]**

REBUILT TELEPHONE & SWITCHBOARDS—Telephone Repair & Supply Company, 1760 Lunt Avenue, Chicago 2, Ill.—**[ADV. 19]**

TRUCK BODIES—Highway Trailer Co., Edgerton, Wisc.—**[ADV. 20]**

WIRE DROP & INSIDE—Jackets of neoprene, rubber or plastic. Lowell Insulated Wire Co., Lowell, Mass.—**[ADV. 21]**

WIRE, Insulated—DATED DROP WIRE—Neoprene or Weatherproof—Alphaduct Wire & Cable Co., Milltown, N. J.—**[ADV. 22]**

WIRE, Insulated Drop and Bronze or Copperweld—Acorn Insulated Wire Co., Inc., 36 Freeman St., Pawtucket, R. I.—**[ADV. 23]**

WIRE, Insulated Drop, Genuine Ironite—Paragon Electric Co., Two Rivers, Wis.—**[ADV. 24]**

WIRE, Insulated Drop, HT Bronze, Paraprene or Braid Insulation—Paragon Electric Co., Two Rivers, Wisc.—**[ADV. 25]**

WIRE, Telephone, for all inside and outside uses—Whitney Blake Company, New Haven, Conn.—**[ADV. 26]**

WANT INFORMATION??
IF YOU DO not see a listing in these columns of products or services you are interested in write "Buyers' Directory", 7720 Sheridan Road, Chicago 26, Illinois, for such information. It will be furnished quickly and without charge.

SEND IN THIS COUPON FOR MORE INFORMATION

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Please forward complete information on the following products and services described in the August, 1952 issue of TELEPHONE ENGINEER AND MANAGEMENT. (Check information desired.)

NEW PRODUCTS

NP 438..... NP 439.....

SERVICES AND SUPPLIES

ADV. 1..... ADV. 2..... ADV. 3..... ADV. 4..... ADV. 5..... ADV. 6.....
ADV. 7..... ADV. 8..... ADV. 9..... ADV. 10..... ADV. 11..... ADV. 12.....
ADV. 13..... ADV. 14..... ADV. 15..... ADV. 16..... ADV. 17..... ADV. 18.....
ADV. 19..... ADV. 20..... ADV. 21..... ADV. 22..... ADV. 23..... ADV. 24.....
ADV. 25..... ADV. 26.....

Name ..... Title.....

Company .....

Street Address .....

Town..... Zone..... State.....

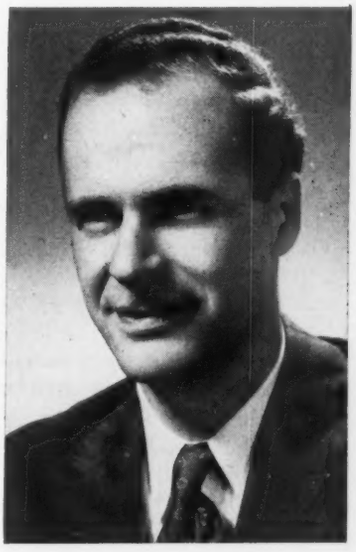
8½ x 11-inch folder of instructions for installing and operating batteries in Independent telephone service.

The folder, an important new addition to the Plus Performance Plan for conserving and extending battery life, tells how to unpack and install a battery and how to give the Freshening Charge.

In the three pages of instruction covering battery operation, the folder describes the Full Float, Continuous Variable Current, High-Low Voltage control and Manual Cycle including details for setting voltage regulators, adjusting equipment and keeping records for each method. It also explains how and when to give equalizing charges in each of these methods.

Technical Data for the various cell types and sizes are given in a full-page data sheet.

The folder points out the precautions to be taken to insure accurate hydrometer readings and shows how to correct these readings for electrolyte temperature. It also outlines the maintenance operations that insure long battery life and dependable service.



C. W. Hunter (above) has been named sales and application engineering manager of the Lenkurt Electric Co. of Canada, Ltd., Vancouver, B. C. Before taking this post he was engineer-inspector of communications for British Columbia with the Canadian Pacific Railroad. Previous to that he was in the engineering division of Canadian Pacific in Montreal. A graduate of the University of Manitoba, Mr. Hunter was, during the war, a signal officer in the Royal Canadian Air Force seeing service on land-line and airborne communications in Canada and England.

No need for gloves with these SAFE-TO-HANDLE seams

Linemen like Armstrong's carefully molded insulators with the safe, smooth seams.

These rugged insulators give you smooth service in operation, too. Their tough industrial glass stands up under loads and thermal shocks far greater than any met in service.

Every insulator is checked for thread contour . . . every pinhole fits perfectly.

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CLEVELAND, OHIO

PERSONALIZED SERVICE

The Telephone Looks To The Future

(Continued from page 43)

on other people in our day-to-day living is still growing rapidly. The acceptance of the telephone not as a luxury but as an essential element in American life—the "telephone habit" is also growing. The result is surely a firm structure of continuing and growing demand for the services which we furnish.

Opportunity—and Challenge

THE FACT that people have become more and more dependent on the telephone imposes on all of us engaged in the telephone business an increased responsibility to see that the service we provide is in every way the best of which the art is capable.

Some of our obligations in this respect are fairly obvious. Greater speed, greater reliability, greater economy are objectives to which telephone people have long been geared. The future holds ample opportunity to make even further progress along this well-trodden path.

Dialing of toll calls by operators was introduced only a few years ago, but well over a third of all toll board calls are now operator dialed. And just a few months ago nation-wide dialing by customers reached the stage of the trial it is now receiving in Englewoo, New Jersey.

Developments such as these are the best evidence that progress toward the familiar goals continues and will continue to be rapid. Sometimes the process unfolds in ways which the customer can recognize, yet often too as improvements of which the telephone user is scarcely aware but of which he is the beneficiary.

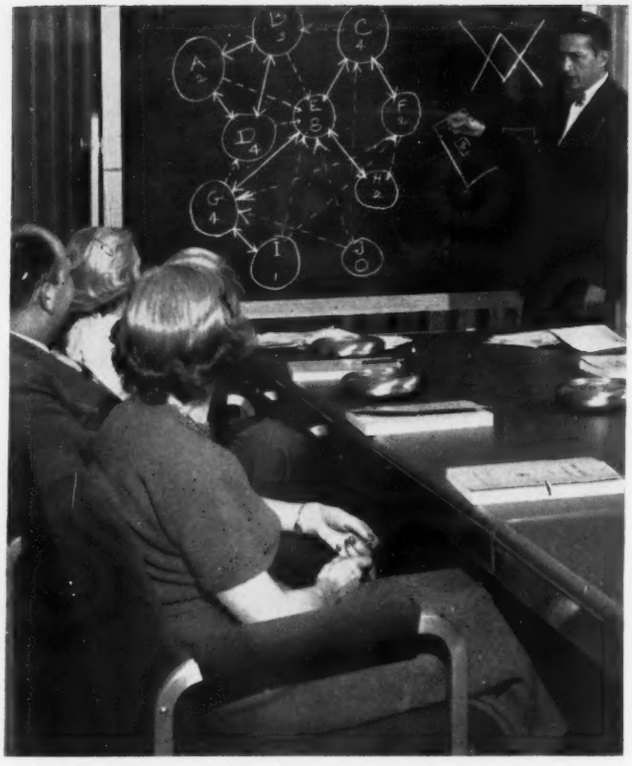
If demand warrants, extra copies of this feature will be made available. Price postpaid, ten or more up to 100, 15 cents each.—Larger quantities, 10 cents each, Adress Reprint Editor, Telephone Engineer Publishing Corp., 7720 No. Sheridan Rd., Chicago 26, Ill.

There has always been more to it, however. Service in each era must be adapted to the needs of that era, which may be quite different from those in the past.

The early-day telephone was screwed to the wall, and the marvel of talking by wire at all was so great that nobody thought it a hardship to have to stand up to do so. However, as more people learned to use it, and found that it could serve different needs, it became apparent that this new method of communicating must be made more convenient if its full benefits were to be realized. Thus we moved along to the upright desk stand and then to the greater ease of the hand set.

The same pattern has been repeated over and over, as people's needs changed and were recognized: Wiring plans and key sets, to permit more efficient and more convenient use of customers' lines and telephones. Dial PBXs, to speed the calls of people in large or medium sized establishments. Order-receiving equipment, to improve the efficiency of department stores and large service organizations. Telephone service to countries overseas, to ships, to motor vehicles, to trains. Networks for the transmission of radio and television programs. The list is indeed a long one.

It would be strange if the very influences which lie at the roots of our recent tremendous growth had not



"Ours is the responsibility to discover new ways . . . Ours is the need for foresight and bold imagination."

brought about material changes in the communication problems of our customers. It is an important part of our task to find out what changes have occurred in their needs and what we have to do to help fill them. Ours is the responsibility to discover the new ways in which better broader, and more convenient communication service can help them in their lives and in their work. Ours is the need for foresight and for bold imagination.

Assurance for the Future

THE MOST fascinating thing about the telephone business is that new and unexpected opportunities for service are continuously opening before us. That is as true now as at any time in the past—perhaps even more so.

The storehouse of ideas and discoveries which will ultimately find their way into better and broader telephone service is being expanded continually. Only those who are deeply immersed in the technical processes of research and development could hazard a guess as to how rapidly this new knowledge can be put to practical use.

There is no doubt whatever that the well tested teamwork of the operating, research and development, and manufacturing branches of the Bell System organization will continue, as in the past, to bring about continuous and rapid progress in that art. And our understanding of what the customer wants or needs must fully match our technical ability to find ways of filling those requirements.

Each major accomplishment simply opens up ways of making telephone service still more valuable by further effort. To be members of a team that has the opportunity to contribute so much to the material welfare of the nation is both an inspiration and a challenge to all of us in the telephone business.—THE END.

Bulletin Describes Effect Of Antimony On Float Batteries

A NEW BATTERY instruction sheet designed to help men responsible for alarm systems, railway signalling, telephone and other systems which use storage batteries on float has been issued by Gould-National Batteries, Inc. of Trenton, N. J.

The bulletin describes self-discharge of Standard, Flote' and Plante' batteries that float on lines from D.C. generators or rectifiers to supply peak power and to take the full load during power failures.

Three curves plot self-discharge rate versus percent of battery life for standard, Flote' and Plante' batteries. By comparing these curves, the bulletin explains why the life of Standard batteries on float is one-third to one-half that of Plante' and Flote' batteries. Plante' cells show no change in the float current required throughout their life because there is no antimony present in the pure lead positives to contaminate the negative active material.

Flote' type batteries have very similar characteristics. The float current rises slightly during the life of these cells since a very limited amount of antimony migration takes place from the special alloy used in Flote' positives.

Simplex Adds To Sales Staff

J. B. TEMPLETON, president, Templeton, Kenly & Co. (T-K) Chicago, manufacturers of Simplex Jacks, has announced new promotions and additions to the T-K sales staff.

Phillip H. McManus, formerly general sales manager, was elected vice president in charge of sales. In addition to directing sales, Mr. McManus will travel in the far Western Territory. A new addition to the staff, William H. Zepp, will assist Mr. McManus in the states of Illinois, Indiana, Iowa, Kansas, Michigan, Missouri, and Wisconsin.

N. L. Montgomery was appointed manager of mining sales in the territory including Southern Indiana, Southern Ohio, Kentucky, Pennsylvania, West Virginia, and Virginia. He will be assisted by a new salesman, Richard S. Bowers of Huntington, West Va.

William D. Boldt, South Eastern division sales manager, with headquarters in Atlanta, Ga., has been assigned the states of Arkansas and Louisiana in addition to his former

(*Please turn to page* 92)

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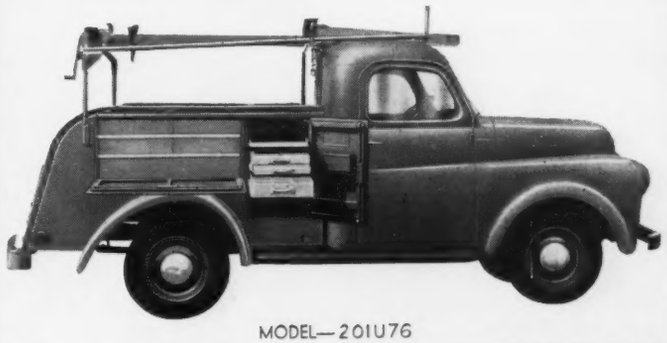

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You can rely with confidence on York-Hoover Truck Bodies because you not only get top quality workmanship, but enjoy lower maintenance costs and efficient performance at all times. For Public Utility Bodies that pay off in faster, better service for you . . . buy York-Hoover!

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FOR SALE—Telephone Exchange. With or without the real estate. Victor Rhine, Stella, Missouri.

FOR SALE—120 line Relaymatic Switchboard, 12 links equipped, in original boxes. Write for further information and description. Western Light & Telephone Company, Inc., Clarence Missouri.

Like New—Replacement Parts, Kellogg Mfg.
Ringers, Harmonic type, 33-1/3—50—66-2/3 Cycle. 30—42—54—66 Cycle, @ **$1.00 each**
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FOR SALE: Magneto Exchange, 200 subscribers, and 49 switched. Gross $6,500. North of Pine City, Minnesota. Residence and plant in good condition. Must sell by Sept. 1 as owner going in service. Price $13,000. E. D. Askay, Finlayson, Minnesota.

Help Wanted

Neale Construction Co., Inc. Journeyman Telephone Lineman and Line Foremen all needed to travel middle west constructing telephone lines and plants. Permanent, steady positions. Good salary. Contact J. L. Berling, Neale Construction Company, 432 W. Crane St., Topeka, Kansas.

WANTED—Salesman to cover Missouri and Kansas for telephone supply house on commission basis. Car furnished. Box 8783, Telephone Engineer Publishing Corp., 7720 Sheridan Road, Chicago, Ill.

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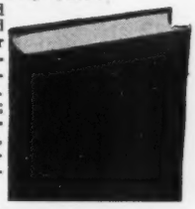

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(Continued from page 89)

territory of Alabama, Georgia, Florida, Mississippi, Tennessee, North Carolina, with Virginia reassigned to Mr. Montgomery.

Arthur C. Templeton, whose headquarters are in Dallas, Tex., will cover the states of Oklahoma and Texas.

McGann Elected V. P. of Int. Std. Elec. Corp.

PATRICK J. MCGANN was elected vice president of International Standard Electric Corp. (ISE). overseas manufacturing and export subsidiary of International Telephone & Telegraph Corp., at a recent meeting of the company's board of directors.

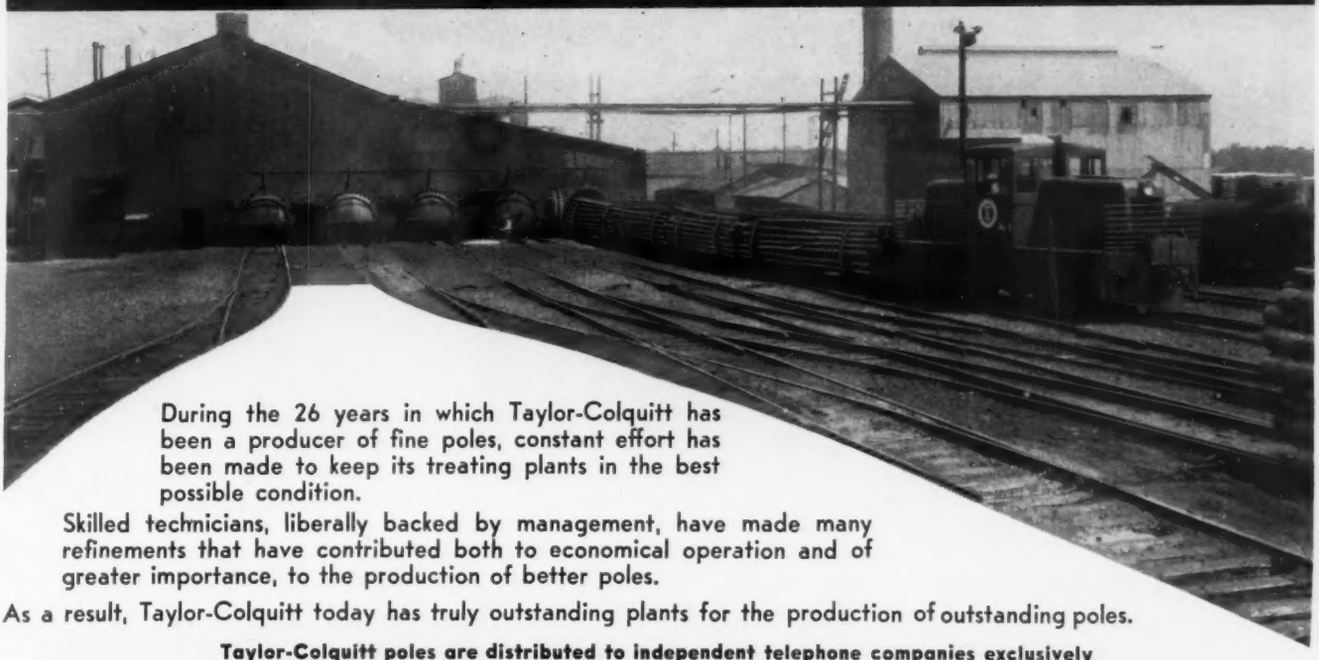
Mr. McGann joined International Western Electric Co., predecessor of ISE, in 1920 and has been engaged in the promotion of exports of telecommunication equipment throughout

Patrick J. McGann, vice president, International Standard Electric Corp.

the world since that date. He has been responsible for contracts covering a large number of very substantial telephone, telegraph, and radio projects in many countries of the world. As export sales manager of ISE since 1943, he has successfully directed negotiations in connection with the modernization and improvement of telecommunication and airport facilities in many countries, particularly in Central and South America.

At the annual stockholders meeting of the corporation, James H. Kellogg, president of Kellogg Switchboard & Supply Co.; Henry H. Scudder and Albert U. Pinkney, vice president of ISE; and Paul F. Swantee, comptroller of ISE, were elected directors.

POLES FROM TRULY OUTSTANDING PLANTS



During the 26 years in which Taylor-Colquitt has been a producer of fine poles, constant effort has been made to keep its treating plants in the best possible condition.

Skilled technicians, liberally backed by management, have made many refinements that have contributed both to economical operation and of greater importance, to the production of better poles.

As a result, Taylor-Colquitt today has truly outstanding plants for the production of outstanding poles.

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Think what it would mean to your firm, your department, your plant, your office, if you could get more real zest on the part of your employees into their jobs—not once, not just tomorrow, but regularly day in and day out.

The book is arranged as a kind of "three-cornered conversation" among the book, the reader and the author. The main argument is carried on logically and impersonally by the book. However, this thread is broken time and again by the author, who offers examples and personal observations to point up the discussion. Whenever he "puts his oar in" in this way, the type is indented and set smaller face. This illustrative matter comprises a broad range of actual case examples.

The book presents five "flow charts" that give graphically bird's-eye views of the ideas developed. After the book has been read, examination of these flow charts in sequence will furnish an accurate review of the whole presentation.

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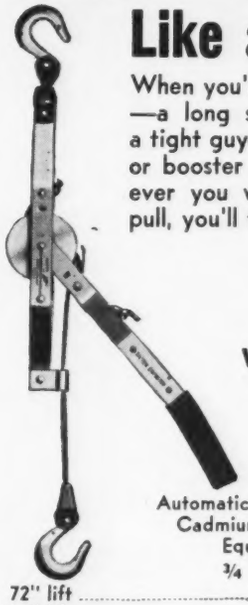

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Hundreds of telephone men have proved to their own satisfaction that this little difference makes the zinc coating on Keystone Telephone wire last two, three, or four or more years longer than it does with other types of galvanizing procedures.

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See Your SUTTLE Catalog

Serving Independent Telephone Men Since 1910

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LAWRENCEVILLE ILLINOIS

J. B. Long, manager of telephone sales for the Graybar Electric Co. recently retired after more than 32 years service.

F. W. Dickerson, recently appointed manager, telephone sales for the Graybar Electric Co., succeeding J. B. Long.

New Appointments Announced By Graybar

F. W. DICKERSON has been appointed manager, Telephone Sales, for the Graybar Electric Co., succeeding J. B. Long who is retiring after more than 32 years of service, G. F. Hessler, vice president in charge of sales, has announced. At the same time he announced the appointment of E. F. Haviland as assistant manager telephone sales.

Mr. Long joined the company as a switchboard engineer in Chicago in Oct., 1919. He came to New York in 1920 as assistant to the railway sales engineer and served as railway sales engineer and telephone sales engineer until his appointment as telephone sales manager in 1940.

A well known figure in the Communications field, Mr. Long has been a member of Railway Telegraph & Telephone Appliance Association, Telephone Pioneers, Independent Telephone Pioneer Association, Petroleum Electric Supply Association and Association of American Railroads.

F. W. Dickerson joined Graybar as assistant to the manager, telephone sales, at Richmond, Va., in Nov., 1945. He became manager, telephone sales, there in June, 1946, and was transferred to New York becoming national manager, communications equipment sales in July, 1949.

A graduate of North Carolina State with a B. S. of E. E. Mr. Dickerson was associated with the Bell System as plant engineer prior to joining Graybar. During World War II, he served in the U. S. Army, helping to organize the Signal Corps officer candidate school in the states and in Australia and served as an executive officer to the Signal Supply Officer in the Southwest Pacific theatre.

E. F. Haviland has been associated with Graybar since Feb., 1937. He started as a student in Chicago and in a year, became assistant to the manager, telephone and broadcast sales and Power apparatus at Philadelphia after which he handled sales to government accounts and broadcast stations in Washington, D. C. In Sept., 1948, he was transferred to Richmond as assistant to the manager of telephone sales. He was transferred to New York last Jan. prior to being appointed to his present position.

E. F. Haviland, newly appointed assistant manager, telephones sales for the Graybar Electric Co.

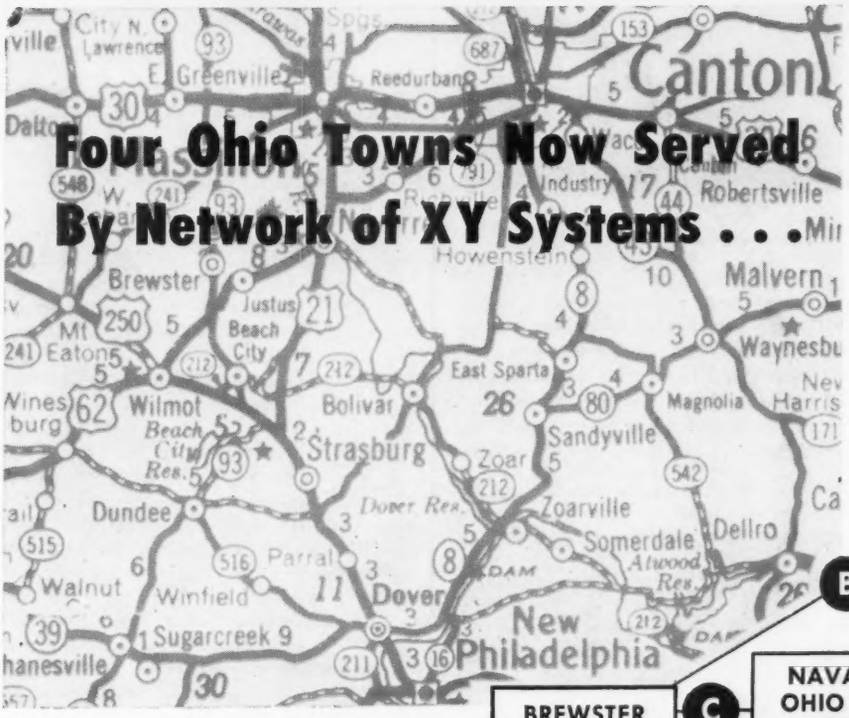
STROMBERG | CARLSON

transmitter

Published by the makers of famous XY Equipment

VOL. 1, No. 5, AUGUST, 1952

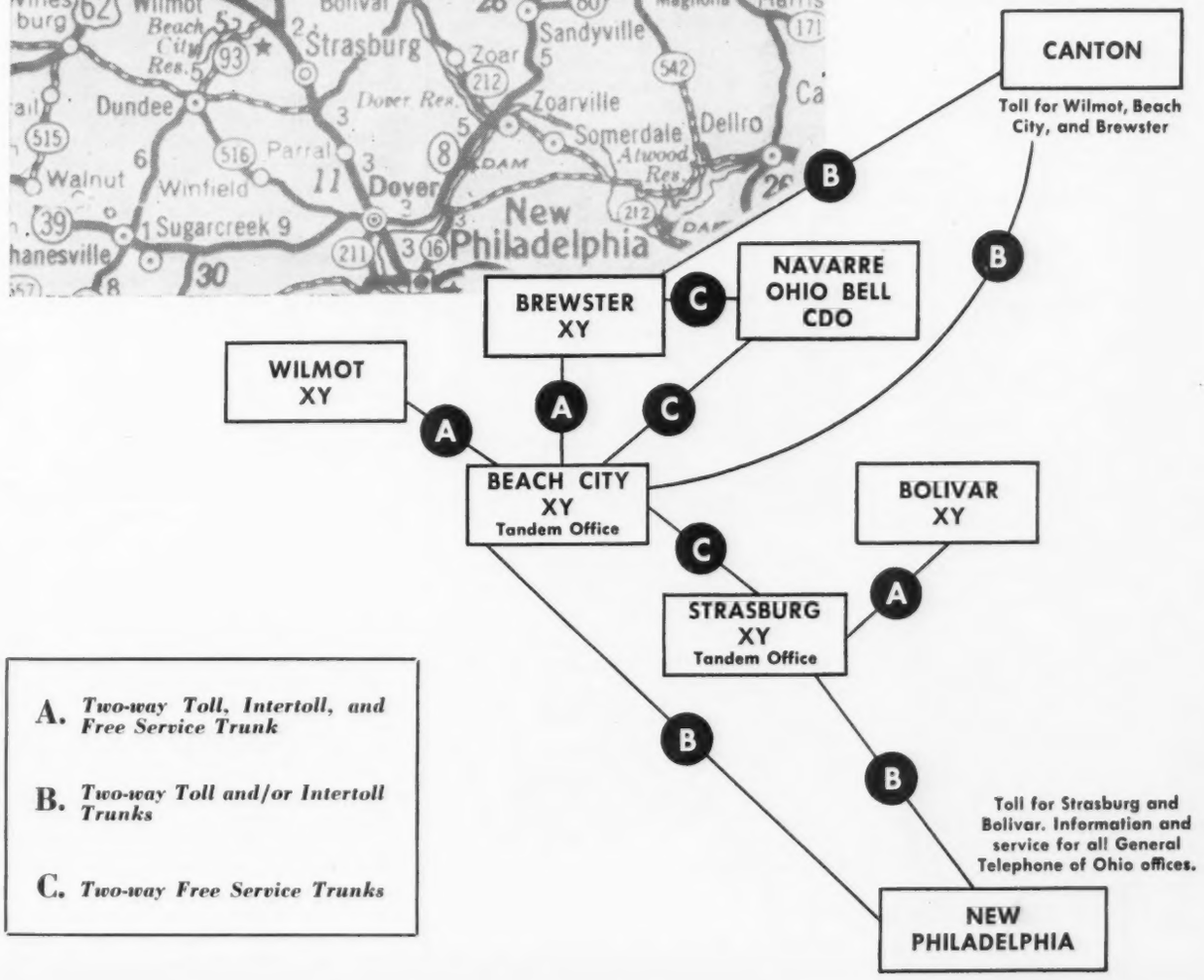
Four Ohio Towns Now Served By Network of XY Systems . . .



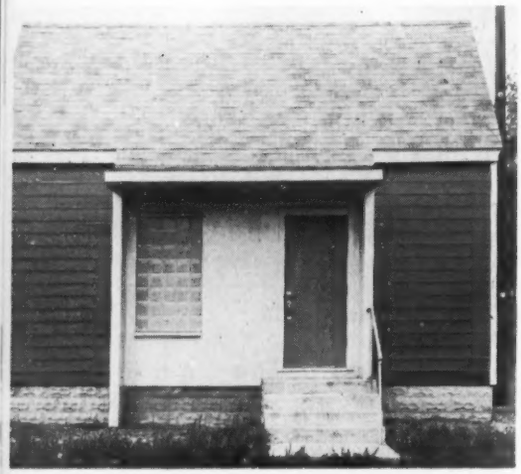
A network of four XY exchanges was cut into service on June 4, 1952 for the General Telephone Company of Ohio. Located at Wilmot, Bolivar, Beach City and Strasburg, these exchanges are all similar in size and equipment. Each system is installed in a new building and the picture shown of Bolivar is typical of the other installations.

William B. Ramsey, Mayor of Strasburg, placed the first call from

(please turn page)


CANTON
Toll for Wilmot, Beach City, and Brewster
BREWSTER XY
NAVARRE OHIO BELL CDO
WILMOT XY
BEACH CITY XY
Tandem Office
BOLIVAR XY
STRASBURG XY
Tandem Office
NEW PHILADELPHIA
Toll for Strasburg and Bolivar. Information and service for all General Telephone of Ohio offices.
A. Two-way Toll, Intertoll, and Free Service Trunk
B. Two-way Toll and/or Intertoll Trunks
C. Two-way Free Service Trunks

the equipment room of the Strasburg exchange. Other distinguished guests included Mr. R. M. Wopat, vice-president; Mr. F. H. Pratt, plant superintendent; and Mr. Howard G. Duhamel, equipment engineer from Marion, Ohio. Mr. Kenneth Spears, commercial manager and Mr. Ted Frindley, installation supervisor from New Philadelphia also attended.

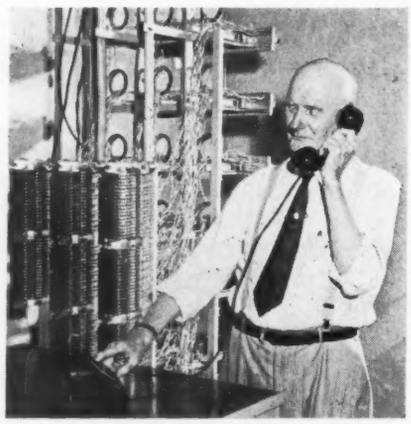


Exterior view of new Bolivar, Ohio, XY exchange.

With the installation of this XY network, the residents of Wilmot, Ohio, have full service to Beach City and Brewster with information service to New Philadelphia by dialing "O" and toll connection to Canton by dialing "110." Beach City has full service to Wilmot, Brewster, Strasburg, Bolivar and Navarre with toll service to Canton by dialing "110" and information service to New Philadelphia by dialing "O." Strasburg residents have free service to Beach City and Bolivar with toll service to New Philadelphia by dialing "O." Bolivar subscribers have free service to Strasburg and Beach City and toll service by dialing "O" to New Philadelphia.

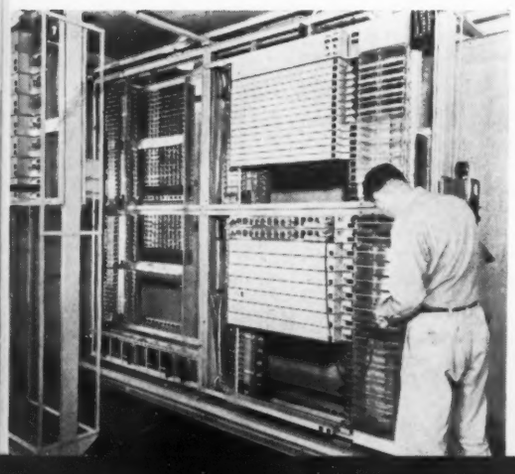
Power Panel at Bolivar, Ohio.

Thus Beach City becomes a tandem office for the towns of Brewster and Wilmot while Strasburg is a tandem office for Bolivar and Beach City.



Mayor William B. Ramsey places first dial call from Strasburg, Ohio.

The Brewster 300-line exchange was cut into service approximately a year ago. Beach City is a 200-line exchange and Strasburg is 190, wired for 200. The towns of Bolivar and Wilmot are 140 and 80 lines respectively and each is wired for 200 and 100 lines in addition.



George Sturtz, maintenance supervisor, makes last minute check of equipment at Bolivar exchange.

MEET
Raymond Golemb

Raymond E. ("Ray") Golemb came to his present position as Manager of Quality and Inspection at Stromberg-Carlson after many years in telephone and switchboard design. Does your memory go back to the No. 1197 telephone? That was his first telephone instrument, and all of the 1200 Series—1210, 1211, 1212, 1215, 1222, 1243—were developed under his guidance as engineer in charge of mechanical design for telephones and switchboards. He knows the elements out of which good telephone equipment is built, and he learned long ago that there can be no compromise with quality.

Perhaps it all started in his first job—an engineer for the company which made the once famous Duesenberg custom-built cars. All this work was individually tailored; the customers paid well for this and fully expected to receive their money's worth in performance.

Ray Golemb attended the Rochester public schools and Mechanics Institute (now Rochester Institute of Technology) Class of 1917. He joined the engineering department of Stromberg-Carlson in 1919; after the long experience in telephone design indicated above, he was selected in 1940 for the new position of manager of quality.

World War II put a real burden on his shoulders and on his capable associate Frederic Haupt, now Assistant Advertising Manager. Army-Navy requirements demanded new protective processes and an entirely new technique for inspection. Some of the lessons learned at this time have been adapted with great success to civilian production, especially valuable when the products are going to be used in warm, moist climates.

Ray Golemb was one of the founders of the Rochester Society for Quality Control and is still active in its direction. This group—an affiliate of the national society—has helped standardize measuring and testing yardsticks, with all industry benefiting greatly.

Outside the office Ray owes allegiance first to his wife and two children—a girl 12 and a boy 8. His son loves to take Dad along to the baseball lot, for Ray pitched a good game of ball when he played on the Stromberg-Carlson team. But like Joe DiMaggio and many others, he has put aside his spikes for less strenuous pastimes.

STROMBERG-CARLSON transmitter

Power and Supervisory Equipment for Dial Systems

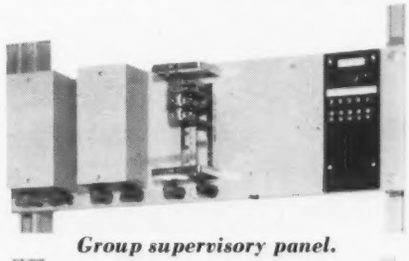
By Ralph T. Williams, Engineering Dept.

WHAT do you consider the ideal power and supervisory equipment required for a dial telephone system?

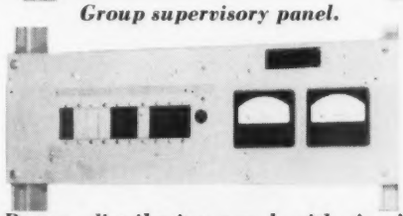
The requirements are fairly simple, to provide them on an economical basis has been a difficult problem. For many years the power and supervisory equipment for dial offices was completely custom made to fit each particular job. Stromberg-Carlson has developed individual units to fit the various requirements. To meet the requirement of a particular office, it is only necessary to assemble the correct units on a frame to provide a power plant exactly suited to the customer's requirements.

Aisle pilot lamp supervisory unit, indicates side of equipment bay from which signal originates.

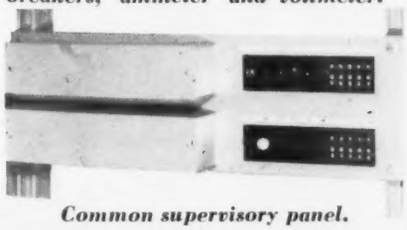
This results in a lower first cost to the customer and assurance that here is a power board that can be adapted to meet any unforeseen conditions which may develop. Unexpected growth, change in type of ringing, addition of intertoll dialing, subscriber toll dialing, change in size or type of ringing or charging equipment can all be taken care of by adding or replacing individual units.



Group supervisory panel.



Battery distributing panel, with circuit breakers, ammeter and voltmeter.



Common supervisory panel.

In addition to the power and supervisory board itself, the battery and chargers must also be considered. In the choice of this equipment, the source of power available for operation of the battery chargers, and other apparatus dependent on an outside power supply must be considered. Power "outages" and the frequency with which they occur, will determine the capacity of the battery reserve or the use of a stand-by engine generator.

The selection of a storage battery and the means of maintaining it in a charged condition are of prime importance. A close estimate can be made of the battery capacity required from a traffic study. The rapid advancement being made in the development of batteries, battery chargers and ringing machines has resolved the selection of this equipment to three factors:

Initial Investment
Maintenance
Floor Space Required

The use of Engine Driven Generator Sets as a stand-by source of power is proving a good investment, particularly in offices with a large number of Toll Lines. When a stand-by unit is used, a battery with a smaller reserve capacity can be employed.

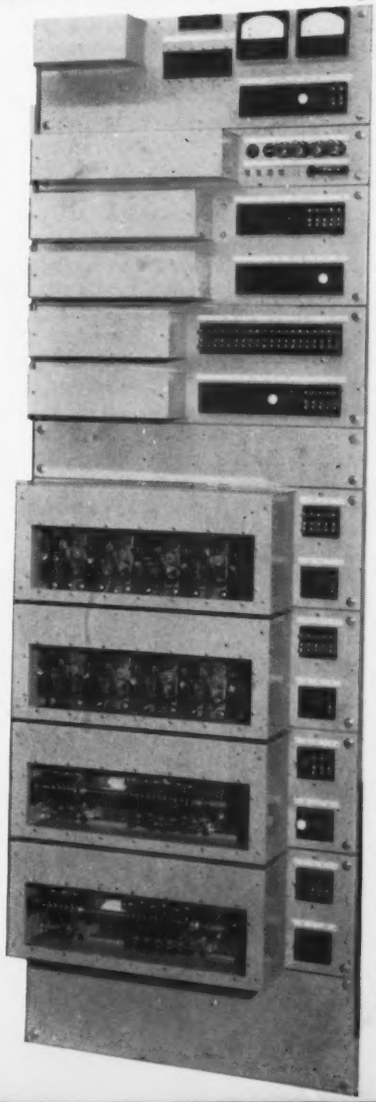
For multi-office exchanges, a portable Generator Set would be an economical investment. The investment for the power and supervisory equipment should provide for the initial installation and a normal growth of 5 years. Good engineering demands that future growth of the exchange be taken into account.

One of the outstanding features of XY equipment is its provision of convenient and time saving supervisory and visual signals. On the power board, centralized signals indicate the performance of the system in either the power or XY switching equipment. For off-normal performance of the switching equipment, additional signals on the power board indicate the particular group of switching equipment involved. In tracing the supervisory signals, the next subdivision of grouping is the indicating pilot lamps which are mounted in pairs on the aisle end of each row of bays of switching equipment. Since XY switching equipment is double-sided, these aisle pilots show the exact row and side of the equipment being checked. From there it is easy to locate the particular shelf that is desired in the row, by means of the lamps on each shelf of equipment.

On the circuit-plate of each switching circuit, a supervisory lamp is used to show when a circuit is being held by a "permanent" or is in use on a call. Provision is made for controlling the lamps by switches common to a whole row of equipment rather than by switches on individual shelves. Selectors held by a "permanent" signal and trunks or connectors held only by one party are indicated by a "bright" lamp signal, while selectors, trunks and connectors which are in use on a call are indicated by a "dim" lamp signal.

The control arrangement is such that circuits can be checked for "permanents" without turning on the "dim" lamps on circuits which are in use on a call. When making traffic counts, the "dim" lamp feature will be switched on with the "permanent" lamp feature and all circuits not idle will be thus indicated. The lamps are all normally switched off when not required.

Although the telephone switching equipment is becoming more and more complex and the power signalling and supervisory requirements may therefore change, the Stromberg-Carlson power board can be readily adapted to meet them. This then, we think is the nearest thing to the ideal power board that has yet been developed.



Typical power board with "unit" panels.

STROMBERG-CARLSON transmitter

Chicago Branch Office Completes 50 Years of Service

W. J. Pfaender, Chicago Branch Manager, and Ruth Rozek, Secretary.

Anne Gallagher, Receptionist

IT was in Chicago where Alfred Stromberg and Androv Carlson together invented a magneto telephone with which a conversation was carried on from the Rector Oyster House to a brokerage house in New York City, on a long distance test in 1893. Two years later, on May 10, 1895, Stromberg and Carlson organized the company in Chicago which still bears their names.

The Stromberg-Carlson Company manufactured telephones and manual switchboards in Chicago until 1903 when the factory was moved to Rochester, N. Y. At that time the Chicago office became a branch operation which has been in continuous operation ever since. The branch office and warehouse serve the thousands of companies in the middle west states of Illinois, Indiana, Iowa, Kentucky, Michigan, Minnesota, North and South Dakota, Tennessee and Wisconsin through its Sales and Engineering Departments.

A staff of experienced telephone men, thoroughly familiar with Central Office equipment and construction material and supplies, consistently travels the ten states to establish close relationship between the independent telephone companies and the Stromberg-Carlson Company. With the assistance of sales engineers, they help in planning Central Office and plant expansion and replacement.

The office personnel includes specialists on Manual and Dial Equipment as well as construction materials and supplies. It is their aim to provide speedy service by maintaining a complete stock of thousands of items which include everything from Cross Arms to Milonite nails and P.B.X. Switchboards to telephones and parts.

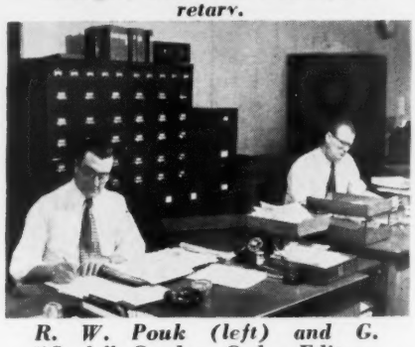
The files in the Chicago Office contain specifications, circuit and equipment drawings of thousands of switchboards of many types sold in the territory. This facility helps in expediting engineering and shipping of additions and replacements for switchboards.

With the introduction of the XY dial system, the Chicago Office is rapidly expanding its scope of operation through the installation of many XY Community Dial office systems and XY Main Dial office systems. Dixon, Ill., was one of the first independent exchanges to have toll dialing in the state of Illinois. Clarinda, Iowa, was the first independent exchange in Iowa to have outward toll dialing. In addition to regular manual and XY dial switchboards, the territory has such special installations as Load Dispatchers' switchboards for power companies, Train Dispatchers' switchboards, P.B.X.'s for sightless operators, Police Boards and boards for various applications.

The Chicago Office has had four division managers; Carl Shafer, who died in 1935; Alex Haubrich; H. T. McCaig, retired; and the present manager, W. J. Pfaender, who assumed responsibility in June, 1940.

Left to right—Charley Carlson; Frank Foley; Les Jones, Traffic Manager; and Ernest Ehlert.

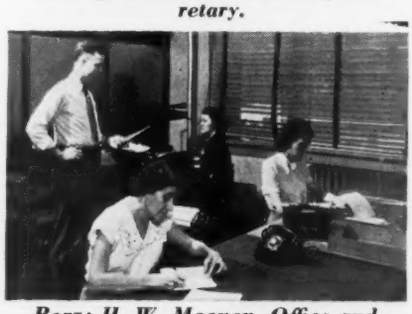
Colby Knapp, National Supply Manager, and Allene Mutter, Secretary.



R. W. Pouk (left) and G. "Curly" Gaydos, Order Editors.

R. E. Hoffman, Sales Engineer, and Blanche Harleen, Secretary.

C. J. Reynolds, Chicago Supply Manager, and Joan Mueller, Secretary.



Rear: H. W. Moonen, Office and Credit Manager, and Miss Tomiko Sato; foreground, l. to r.: Evelyn Cox and Helen Koontz.

STROMBERG-CARLSON transmitter

FACTORY TRIP . . .

This month's plant tour takes us through the steps of quality control at Stromberg-Carlson. Above, Raymond E. Golemb, Manager, discusses inspection procedure with (l. to r.) David Cadwallader, Charles Popell, Robert Connellan, and Llewellyn Jones.

Quality Comes First at Stromberg-Carlson

By Raymond E. Golemb, Manager of Quality and Inspection

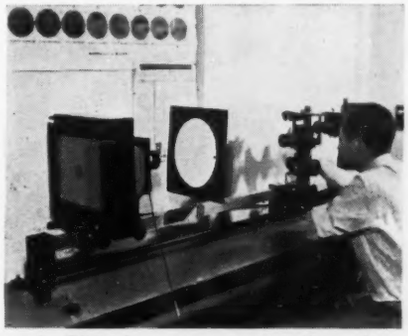
Building high quality merchandise is a tradition at Stromberg-Carlson; it is surprising how often the name Stromberg-Carlson and Quality are associated as synonyms by the operating companies. To perpetuate this reputation is the permanent policy of management.

Unlike many industries, Stromberg-Carlson fabricates from basic materials practically all of the components that go into telephones and switchboards or dial systems. This puts the company in a preferred position to maintain rigid control of quality all the way from material selection to final assembly.

If we start through the plant by going first to the Receiving Department, one of the first observations is the seriousness and responsibility of those employees directly concerned with passing on quality. All material is routed through Incoming Inspection, under the supervision of Charles Popell, where it is checked for complete conformance to specifications. Particular care must be exercised in passing certain raw materials such as precious metals, bronze, silk and plastics.

Microscope analysis or chemical analysis is made in the Materials Laboratory, in addition to checking the physical requirements such as dimension, texture and hardness, before this material is passed into stock. Such an operation, and the equipment necessary to perform it, are expensive; but telephone installations are an investment for the long run, and at Stromberg-Carlson it is believed that a long-lived product can only be produced from high grade materials.

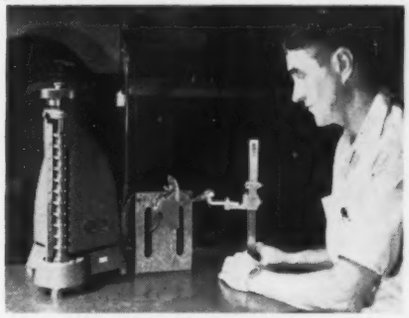
As we move to the Shop, we note how many precautions are taken to prevent



2. This instrument permits microscopic analysis of metal structure, also checks thickness of plating.

waste of scarce material or unnecessary cost in fabrication. A primary concern is for the tools used in punching, cutting, drilling and turning. The Tool Inspection Department, headed by Robert Connellan, maintains a laboratory equipped with the latest precision measuring devices —optical comparators, super micrometers, delicate Swiss measuring machines—all the facilities needed to hold minute tolerances of the tools, gages and fixtures. This extreme watchfulness over manufacturing tools is one of the chief reasons for the amazing precision of such products as the XY Switch, the Stromberg-Carlson Dial, and the A-Type Relay.

All tools are given a complete inspection after each run; the tools together with the last part produced on any run are submitted for this inspection, and all necessary adjustments, grinding and repairs must be made before the tool is re-



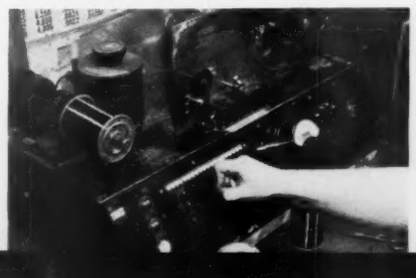
3. Checking concentricity with Cadillac Pla-Chek gage.

admitted to the Vault. Those tools and fixtures which are permanently assigned to one department are listed for frequent scheduled inspection. This time-consuming process pays off for the customer—in reliability, for his parts will perform as expected, and in lower cost, for this method eliminates wastage of material and loss of irreplaceable man-hours.

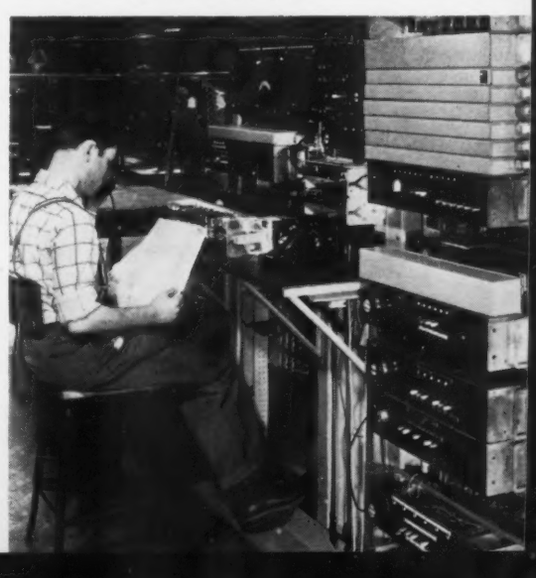
The telephone customer is more directly concerned with the next steps in quality control—the physical and operational conformance of the product he will receive. Just as tools are checked before and after a run, the first and last component parts as well as random samples are scientifically measured and tested for any possible deviation from standard. Only perfect parts move to the assembly line, for it is this careful screening which permits high quality production on a competitive basis.

The visitor to the assembly departments

(please turn page)



1. Testing insulation of enamel coated wire. Machine designed by Stromberg-Carlson.



4. Circuit plates get final check here before shipping.

STROMBERG-CARLSON transmitter

will be amazed by the abundance of testing and inspection facilities, particularly those used for checking switchboards. Telephones, under the jurisdiction of David Cadwallader, receive visual, physical and electrical tests against laboratory-proved standards. The famous coil and capacitor assembly—which confounded so many at the USITA Convention by its unlimited performance under water—is given a complete breakdown and transmission test. All other sub-assemblies must perform under extremely adverse conditions. Then the complete instrument undergoes a rigid operational test.

Manual Switchboards continue to play an important part in the over-all company business, especially the two-toned PBX cabinets. Long experience in this field has led to tried-and-true methods which cover all operational characteristics as well as physical appearance. All switchboard inspection—manual or dial—is under the surveillance of Llewellyn Jones.

XY dial equipment—since it is so modern—posed real problems for the inspection group. No existing equipment was fully capable of making the exacting tests required, and much of this had to be designed for the purpose. For example, the XY Switch is held within such close physical tolerances as are duplicated only in

5. Final test of XY Switch before packing.

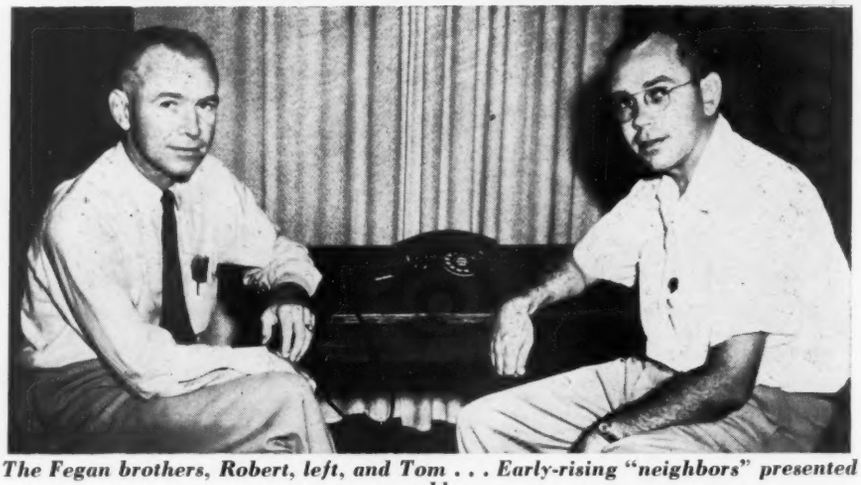
the finest watches; it also must prove itself under extreme conditions of heat and cold. After electrical performance and breakdown tests to insure against passing a borderline XY Switch, it is immediately packed in its own special shipping container to prevent possible damage in storage or transit.

In addition to the all-important function of performance testing, the eye appeal is not overlooked. Cables and conductors must be properly dressed, all solder connections firm; cabinets are checked for matching color and craftsmanship; finish must reflect our reputation for quality.

Within the limitations of the defense program, visitors are welcome to see for themselves our factory operation.

A Study in Dial Economics

By Robert and Tom Fegan, Junction City, Kansas



The Fegan brothers, Robert, left, and Tom . . . Early-rising "neighbors" presented a problem.

Mr. Robert Fegan
Junction City Telephone Co.
Junction City, Kansas
Dear Bob:

How did you and Tom arrive at the decision to convert to dial?

Inquisitively yours,
Art Preble

Mr. A. B. Preble
Stromberg-Carlson Co.
Kansas City, Mo.
Dear Art:

Your assignment is really quite a chore. It is hard to believe but true, that after all of our plans to convert to dial operating it is difficult to explain just why. But here goes—"Why We Selected Dial Equipment for our Junction City Exchange."

In the first place, Tom and I are both conceited enough to believe we are reasonably good telephone men. If this premise is true—then like all good telephone men our first thought is the best possible service for our subscribers. The next thought is what will give the best service to our customers as shown by our operating conditions. With these thoughts resolved, it is necessary to look to the economics of the situation. Will it prove in now; five years from now; and what about a depression?

Junction City is a rapidly expanding community located adjacent to the Army General School at Fort Riley, Kansas, and has been in existence for the past 100 years. The Army operates its own telephone system but is connected with this exchange by PBX trunks. The majority of the telephones on the Army system have access to our subscribers and vice versa at no charge. Because of this situation and the military habit of awakening at 0600 it is an almost impossible task to fix a busy hour for our traffic. This is especially true of local. Various activities of the military such as troop movements, etc., reflect themselves immediately on our switchboard. They come without warning and at anytime. The only way we can satisfactorily handle such a traffic condition and give our subscribers the best possible service is through dial operation.

The economics of the situation naturally is what concerned us the most. Before taking any steps, we built up pro forma information using various rates and rate basis and then assumed various conditions such as: wage scales, tax rates, costs, and other operating conditions that all telephone companies are likely to find.

After an analysis of the various pro forma exhibits we were convinced we were right and applied our "acid test." What if we have another depression? In applying this test we took the very best year as far as subscriber revenue was concerned and the best year of toll revenue. We then used the poorest year of both of these accounts and took the percentage of loss. This loss we then applied to the figures of our pro forma, being very careful not to assume any saving that might accrue due to lowered taxes, wage rates, etc.

The results were so good that we immediately began our negotiations for dial equipment and we are now anxiously awaiting our XY installation.

Sincerely,
R. J. Fegan, President
and General Manager
T. B. Fegan, Sec'y and
General Superintendent

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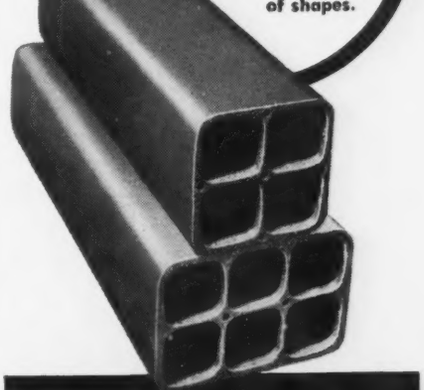


National Fireproofing Corp.
327 FIFTH AVE.
PITTSBURGH 22, PA.

Plan Now To Attend Your Association's Annual Convention

Plan Now To Attend Your Association's Annual Convention

THE BACK OF THE BOOK

By JOHN G. REYNOLDS, Managing Editor

"Orchids For The General"

BRIG. GEN. WILLIAM P. CAMPBELL had good cause to avoid the telephone recently. He's had enough.

For seven straight days General Campbell made 296 telephone calls to families and sweethearts of GI's assuring the home folks that the men still love them, are healthy and are doing fine with the Army overseas.

The Army's assistant chief of finance recently completed his long-distance talks with people in 32 states. And he would have talked to a young woman in Moose Jaw, Canada, but she told the operater that she had a new boy friend and wouldn't be interested in what the old one had to say.

Still, the talks had international flavor. Thanks to a former tour of duty in Peru, Gen Campbell was able to speak in Spanish for families in Los Angeles and Laredo, Tex. Then he had a tete-a-tete with a flabbergasted Polish-born Pennsylvania coal miner, who marveled:

"I'm talking to a general? This never happened in the old country-"

Here's how it came about:

This spring, General Campbell went to Europe and North Africa, to find out how well the Army pay system was working.

"My official mission included talking to as many soldiers as possible about the pay system. It seemed like a good idea to offer my services as a telephoner, too," he said.

So as he met with some 5000 GI's abroad, he made his proposition:

He'd telephone their families and friends—collect, of course—when he got back home. Three hundred took him up.

Back home, Gen. Campbell began his mission on Memorial Day weekend. "I arranged with the phone company for special operators," he explained. "I made calls at nights and on Sundays, because they cost the solders' families less at those times. Also, I wanted to do it on my own time."

He averaged about six hours a night—one Sunday he put in 11 hours.

The response, he said, was dandy.

The general failed to complete four calls. In three cases, the parties couldn't be located. The fourth was the fickle girl in Moose Jaw.

• • •

Pocket-Size TV Phone Forecast

SOME DAY a subscriber may be able to carry a midget telephone in his pocket to receive and make calls no matter where he happens to be, and see the person to whom he is talking.

Dr. Harold S. Osborne, retiring as chief engineer of the American Telephone and Telegraph Co., recently made that forecast among these others:

(1) Eventually a subscriber will be able to dial any number anywhere in the country, with no help from a long distance operator.

(2) With 70 per cent of the nation's homes having phones, the ratio will continue to increase for years to come—towards 100 per cent.

(3) Many homes will have two separate telephone lines and numbers—"especially those with teen age children."

(4) There will be many more autos with telephones that can be connected right into the regular telephone system; more telephones on trains, boats and private as well as commercial airplanes.

(5) If there's a demand, there will be cordless telephones so a subscriber can see the person at the other end of the line, and be seen? Dr. Osborne said:

"We have no indication at present that the public would want that kind of service."

He pointed out that Bell labs demonstrated personal TV-telephone communications between New York and Washington 25 years ago.

However, if some company with branches and offices scattered over various parts of a city wanted video-telephone service, it could have it now.

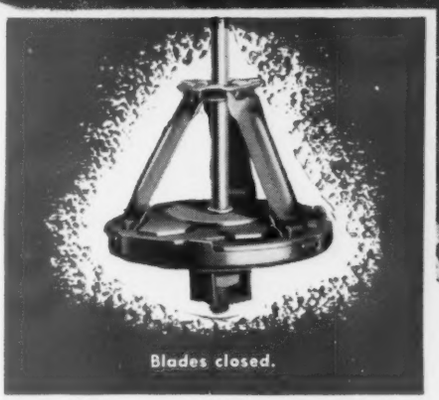
L-M's Expanding Anchors

now redesigned to give you

✓ FASTER INSTALLATION!

✓ GREATER HOLDING POWER!

✓ AT NO INCREASE IN PRICE!



Blades closed.

Partly expanded. Spreader arms push blades out easily—no binding.

Fully expanded.

L-M has redesigned its steel expanding anchors to give you easier installation, and greater holding power.

Expanded area is increased 10 to 15%—which means more holding power in any kind of soil.

Spreader arms are heavier and stronger. These improvements, together with a new hinge arrangement, completely eliminate binding. Tamping is much easier, installation is faster.

As the tamping block strikes the tamping collar, the strong spreader arms give the steel blades a sliding action that cuts into the surrounding soil quickly and easily.

These anchors are 8" in diameter when fully closed and are available in two-way, three-way, or four-way designs, for ½", ⅝", and ¾" anchor rods.

Sold for L-M to the independent telephone industry by

KELLOGG Established 1897 **SWITCHBOARD AND SUPPLY COMPANY**
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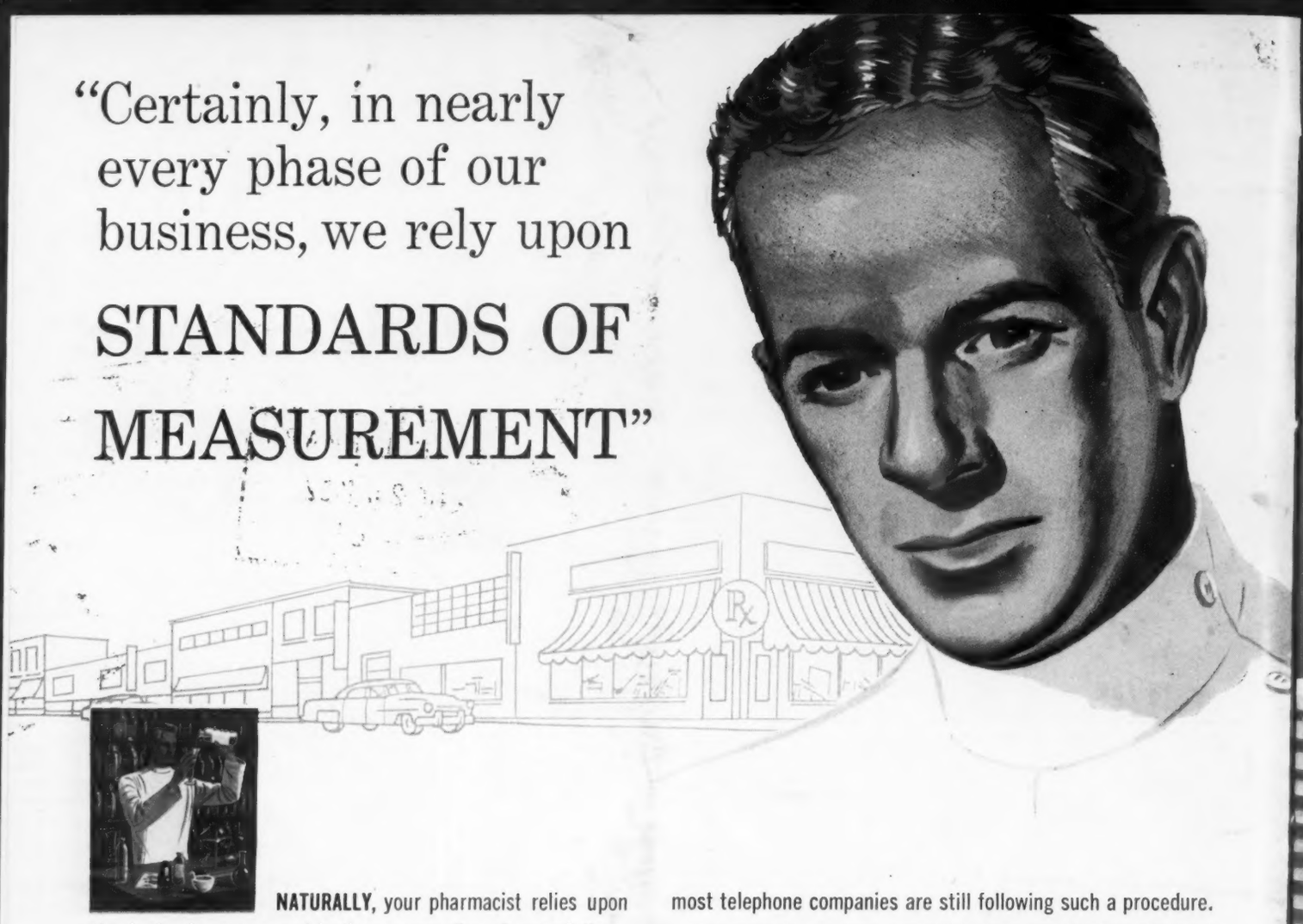
LINE MATERIAL *Line Construction Materials*

"Certainly, in nearly every phase of our business, we rely upon STANDARDS OF MEASUREMENT"



NATURALLY, your pharmacist relies upon standards of measurement in the compounding of prescriptions. This part of his work demands painstaking accuracy and strict adherence to proven standards. However, even in other phases of his operation, such as the soda fountain, your druggist relies upon standards of measurement. The amounts of all ingredients that are used in the mixing of a soft drink, making a malted milk, and even the number of gum drops he sells a child for a nickel are checked against accepted standards of measurement.

In nearly every field of endeavor, there are accepted standards of measurement by which relative worth or performance is judged. There are, however, a few outstanding exceptions to this rule. For example, we find that very few Independent Telephone Companies have ever checked the worth of their directories by applying a proven standard of measurement.

LET US ASK YOU JUST ONE QUESTION.

Did you measure the results of your current directory by simply comparing it with your previous issue? Unfortunately, most telephone companies are still following such a procedure.

The records we have compiled from publishing telephone directories which serve more than 4,000 Independent Telephone Exchanges have enabled us to establish positive standards by which we can measure the success of a telephone directory publishing job. Among the standards we have developed are: normal directory revenue per station; normal directory revenue per business account; normal directory revenue per advertiser; and, average number of advertisers per one hundred business accounts.

These established standards, when applied to your current directory, will show you whether or not it was as successful as it might be. And, it will be quite apparent whether or not we can increase your net profit from your directory.

Let us prove the validity of our claim. Send us a copy of your current directory and let us make a study of it without any cost or obligation whatsoever.

Mail us a copy today — you have everything to gain and nothing to lose!

TELEPHONE DIRECTORY COMPANY

Publishers of Telephone Directories throughout the United States and the Territory of Alaska.

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To have a representative call, simply telephone collect or write to the nearest office listed above.